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THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matter which the readers of such a paper as this are gratified to find within its columns.

## ORGANIZATION.

At a meeting of the stockholders of the Central Railroad and Banking Company, of Georgia, held in Savannah on the 1st inst., the following directors were elected by a majority of 4,211, the total vote polled being 66,379: W. G. Raoul Andrew Low, Edward C. Anderson, J. Gresham, George Cornwell, Jacob Ravers, E. H. Green, H. M. Comer, Abram Minis, William Hunter, John M. Guerard, George J. Mills, and W. W. Gordon.

At the annual meeting of the Terre Haute and Indianapolis Railroad Company, known as the Vandalia line, held in Terre Haute, Ind., on the 1st inst., the following directors were elected: Wm. R. McKeen, Alexander McGregor, Josephus Collett, D. W. Minshall, Henry Ross, J. C. Crawford and George E. Farrington. Subsequently the new board met and elected the following officers: President, W. R. McKeen; Secretary, George E. Farrington; Treasurer, J. W. Cruft. The old board of directors of the Logansport division was re-elected, and an election of officers resulted in the choice of W. R. McKeen, President, and George E. Farrington, Secretary and Treasurer.

## INCORPORATION.

A CERTIFICATE of incorporation has been filed with the Secretary of State of Ohio, of the Toledo Belt Railway Stock Yard and Abattoir Company; capital \$200,000.

A CHARTER was granted at the State Department, Harrisburg, Penn., on the 27th ult., to the Clearfield Bituminous Coal Company. The capital stock is placed at \$5,000,000. The incorporators are William H. Vanderbilt, New York; George L. Magee, Watkins, N. Y.; C. J. Langdon, Elmira, N. Y.; Cornelius Vanderbilt, New York; William A. Wallace, Clearfield, Pa.; S. R. Peale, Lock Haven, Pa.; James Tillinghast, Buffalo, N. Y.; John Long, Corning, Pa.; J. D. F. Slee, Elmira, N. Y.; Wm. D. Kelly, Elmira, N. Y.; John G. Reading, Philadelphia,

L'enn., Joseph M. Gazzam, Philadelphia, Penn., and Bishop L. Wallace, Clearfield, Penn. The main object of the new corporation is to mine and sell coal, iron ore, fire clay and other minerals and to manufacture and sell coke made from bituminous coal. The principal office will be at Clearfield, and the business will be transacted in Clearfield and Centre counties. The outlet north and east for the business of the new corporation, it is stated, will be through the Susquehanna and Southwestern Railroad, a charter for which was granted last August, and of which William A. Wallace is President. The railroad corporation has a capital of \$4,000,000, and its lines will pass through Lycoming, Clinton, Centre and Clearfield counties, portions of the State that have never been practically developed. The Reading system from New York and Philadelphia, it is alleged, will give a ready and cheap transportation to the east, while the Jersey Shore, Pine Creek and Buffalo Road will supply an outlet to Buffalo and the great lakes.

A CERTIFICATE was filed in the office of the Secretary of State at Hartford, Conn., on the 2d inst., for the organization, under the General Railroad Laws of Connecticut, of the Hartford & Harlem Railroad Company. The capital is \$5,000,000, divided into 500 shares of \$100 each. The principal office will be at New Haven, Conn. The designated route is from the New York State line at some convenient point on the boundary of the town of Greenwich to some convenient point in the town of Hartford and through the towns of Greenwich, Stamford, Darien, Norwalk, Westport, Fairfield, Bridgeport, Stratford, Milford, Orange, New Haven, Camden, North Haven, Wallingford, Meriden, Berlin, New Britain, Newington, West Hartford and Hartford. The estimated distance is 85½ miles. The directors are Albert M. Billings, Chicago, who has 1,000 shares; Lewis M. Brown, New York, 1,000 shares; Charles G. Francklyn, Brooklyn, 3,000 shares; and the others as follows, with only small holdings of stock: N. W. Bruggerhoff, Darien, Conn.; Warren & Day, Bridgeport; F. L. Higginson, Boston; H. G. Lewis, S. G. Thorne, John E. Bassett and Henry H. Killam, New Haven; Charles A. Whittier, Boston. Among the other stockholders are G. T. L. Higginson, Boston; S. E. Baldwin, New Haven; L. Gardner, Jr., and Charles Fairchild. The attorney acting for

the petitioners is Simon E. Baldwin, of New Haven. The route as surveyed, it is understood, leaves out New Haven city proper, which can be connected with either by a spur track or the Derby road, and on this account some of the old parallel road men in that city are at the outset expressing opposition to the enterprise. The certificate further sets forth that the stockholders contemplate a union or consolidation or some permanent arrangement with one or more corporations organized under the laws of the State of New York, or otherwise to acquire rights and property in the State of New York, to the end that a continuous transportation line may be formed from some convenient point in New York city to the State line at Greenwich, and thence through the Connecticut towns above mentioned. Three of the directors attest that \$5,000 of stock for every mile has been subscribed for in good faith, and ten per cent of the cost of construction paid in. This latter is essential under the Connecticut law.

## CONSTRUCTION.

It is stated that engineers are staking out the work for a double track on the Chester Valley Railroad.

THE fourth track of the Pennsylvania Railroad has been finished from Torrens to beyond Homewood.

It is expected that the Shamokin, Sunbury and Lewisburg Railroad will be completed by the 1st of March.

THE construction of a railway across Australia from Brisbane to Point Darwin has been decided upon.

WORK was commenced on the 28th ult. on the roadbed of the Pittsburgh, Toledo and Chicago Railroad at Akron.

A SURVEY has been completed for a railroad from Valatie, Columbia county, N. Y., to the Hudson River, a distance of about five miles, connecting with the Hudson River Railroad.

SEVEN thousand men are now working on the British Columbia section of the Canadian Pacific Railway, and rapid progress is being made. The contract will, to all appearances, be completed within the allotted time.

SPAIN and France are to have a railroad connection, the termini to be Orolon and Pau. This road was long discussed, but it seems that



the contract has at length been let and that the work of construction will soon be begun.

THE Essex Centre cut-off of the Canada Southern Railway is now completed, with the exception of the slip at Windsor, which, owing to some error in construction, would not accommodate the ferry and will have to be enlarged.

THE Pemigewasset Valley Railroad track is now laid about eighteen miles, to within about two miles of the terminus at North Woodstock. About forty men are now working on ledges. Track laying will be resumed about February 1. There will be no delay in the work on account of the death of the contractor, which will be carried on by his bondsmen.

AN agreement has been executed between the Williamsport and Clearfield, the Pennsylvania, Bald Eagle Valley and the Philadelphia and Erie railroad companies, under which a railroad will be built from the mouth of Beech Creek to Snowshoe during the present year. It is stated that a contract has been made with a substantial party in New York to construct it by the 1st of September next.

W. T. SUTHERLIN, president of the Danville and New River Railroad Company, contracted on the 29th ult. with A. B. Fortune, of Asheville, N. C., for an extension of the railroad from Martinsville to Patrick Court-house, a distance of thirty-two miles. The company is to furnish the rails and other iron, and Mr. Fortune is to do the grading, trestling, and bridge work, get the cross ties, lay the track, and finish the work during the present year.

THE proposed Mount Vernon, Coshocton and Wheeling Railroad, now under survey, will leave Wheeling or Martin's Ferry and follow the line located by the Wheeling and Lake Erie until it reaches the divide between the waters of Short Creek and Stillwater, following the valley of the Clear Fork until the line strikes the survey of the old Southwestern, thence west via Freeport to Coshocton or via Uricks-ville, crossing the White Eye Plains. West of Coshocton the road will pass through the towns of Mount Vernon, Marion, Defiance and Bryan to the northwest corner of the State, where connections will be made to Lake Michigan.

THE main line of the Canadian Pacific Railway is now open from Thunder Bay almost to the crossing of the Saskatchewan at Leopold. The Southwestern branch of the Canadian Pacific and the Manitoba Southwestern Railways traverse the best portions of southern Manitoba. The Portage and Westbourne road runs from the Portage in a northwesterly direction to Gladstone towards the fine settlements beyond. The branch from Winnipeg to Selkirk carries away the trade of several old settlements, and a new branch to there, of which twenty-two miles have been completed, is in course of construction. Altogether, including the main line from the Landing to Leopold, and the several branches, there are not less than 1,300 miles of road in operation in a region containing not more than 250,000 people. This is a mile of railroad for every 200 souls. If Old Canada were as well supplied, her 4,500,000 people would enjoy the convenience of about

22,500 miles of railway, instead of less than one-fourth of that mileage.

THE Baltimore *Sun* says that the Catonsville Short Line Railway, which has lain dormant for several months, is about to be pushed rapidly forward. The directors have placed engineers on the route, which extends from St. Agnes Station, on the Baltimore and Potomac Railroad, to Catonsville. Plans will be prepared and bids for work invited. The road passes through the property of twenty-one persons, twelve of whom have granted the right of way. Steps are being taken to condemn, and as soon as the legal obstacles are removed the work will begin. The road will be four miles long, with stations one mile apart. Trains will probably be run from Calvert Station to Catonsville. The officers are James A. Gary, president; Henry James, vice-president; Eugene Carrington, secretary; John Glenn, treasurer, and Dr. C. G. W. Macgill, Gustav Geicke and T. L. Tinsley, directors. Over \$40,000 has been subscribed to the stock, ten per cent. of which has been paid in. The enterprise is of great importance to the development of an attractive suburb of Baltimore.

THE New York, New Haven and Hartford Railroad Company have in contemplation, and will shortly commence, the laying two extra tracks between this City and New Haven, thus making a four-track road between the two cities. The board of directors of the road recently passed a vote authorizing this extension of their facilities, as the demands upon the road both for freight and passenger business are greater than the facilities afforded by the existing double-track route. Bonds to cover the expense will be issued at an early day, and the work, surveys for which have already been made, will be pushed forward to completion as rapidly as possible. The new tracks will be laid alongside those now daily in use, and the necessary bridges along the route will be widened or rebuilt to accommodate the extra tracks. The company has recently purchased a large quantity of real estate east of its present freight depot and track yards, on the Harlem River, extending to the Harlem Kills, from Mott avenue on the east, and down to the river on the south, which gives them a considerably enlarged waterfront. The land thus purchased is to be used for increased facilities for handling freight in that vicinity. There still remains between this newly acquired property and that now used several small tracts of land, which will probably be acquired by the road sooner or later.

THE Indianapolis *Journal* says: "The iron-clad order issued by Superintendent Watts, of the third division of the Pittsburgh, Cincinnati and St. Louis Road, which prohibits trainmen using intoxicating liquors and the visiting of saloons or gambling-houses during the hours of duty, and which also requests that when off duty they avoid such places, is working admirably. During the month, however, thirteen men have been discharged for disobeying the order."

THE largest city in the world is London. Its population numbers 3,020,871 souls. New York, with a population of 1,250,000, comes fifth in the list of great cities.

### Tennessee's Renewed Disgrace.

At the time Col. Polk had his memorable interview in New York, when he confidently predicted that the "new Legislature would contain 52 Republicans and 24 State credit Democrats out of a total of 132," it will be remembered that the Colonel gave way to the following: "Now, allowing for the possibility of success of those people, bondholders by accepting the present compromise will make one year's interest on the new bonds. I am paying the July coupons on the bonds as they are issued, and have the funds on hand to pay the next January coupons. And I intend to pay that coupon." The italics are ours, the words are the Colonel's. Tennessee is a great State, with a record made in a short life-time that any people might be proud of, but may we be pardoned for asking if this picture of ourselves is pleasant to contemplate? Twice have we funded bonds and coupons, making the holders pay the expense of the same, which resulted in large fees to the State officers without paying any interest to the bondholder. In this instance it seems to have been the impression that the funds on hand to pay one whole year's interest would be a moving inducement to them to fund and—well, yes—pay the fees as a matter of course. But now it is announced at the very last day, when no more bonds come in to be funded, that the Treasurer has suddenly heard something drop and will pay no more interest. Now we desire to move, if we can get a second to the motion, that these State officers pay back to the bondholders the fees which they have collected. Let us do that much for them any way. We understand that perhaps they cannot be made to do so, but this does not alter our opinion as to what ought to be done. It is a nice picture that we have drawn of ourselves.—*Nashville Am.*, Dec. 30.

### Street Railway Law.

A CAR was stopped to allow a passenger to alight, and another passenger left her seat to get off the car. She had not given the conductor or driver notice that she desired to alight, but the car was at a stop when she arose and went to the platform, and as she was stepping off it was started and she was thrown to the ground and injured. In an action for damages (*Rathbone vs. Arion Railroad Company*) the plaintiff recovered judgment, and the company petitioned the supreme court of Rhode Island for a new trial. The petition was dismissed, Judge Carpenter, in the opinion, saying: "In this case the car had stopped, or was apparently about to stop for the convenience of a passenger and in response to the signal of the conductor. We cannot say that, under the circumstances, it was the duty of the plaintiff, as a matter of law, to give notice that she also desired to alight. The stopping or slowing of the car in response to the signal we think might fairly be taken as notice by all passengers that all who desired to alight might take advantage of the opportunity."

"At night astronomers agree," and day and night writers agree on the merits of Esterbrook's Steel Pens.

Atlantic and Pacific Railroad.

Nor long since Gen. W. Sooy Smith, D. K. Tripp, of Chicago, and D. W. Kinsley of the Massachusetts Board of Railroad Commissioners, were appointed by the President of the United States a commission to inspect about 250 miles of recently completed Atlantic and Pacific Railroad. The first section inspected was one of about fifty miles of road, running from Vinita to Tulas, near the Arkansas River, in the Indian Territory. The next section was a length of about 200 miles, on the western division of the Atlantic and Pacific, beginning at a point about 200 miles west of Albuquerque. In the first instance the inspectors, having finished the portion of the work in which the government is particularly interested, continued their researches to the Arkansas River, for their own edification; and, in the second, kept on from the western terminus of the recently completed portion of the road until they reached cañon Diable. Their investigation was thorough and searching, and really included, on their own account, a much wider range than was comprehended in their commission, as will appear. Having finished their labors they have returned and their report has been regularly submitted to the proper authorities. According to the Boston *Economist*, Mr. Kinsley declares the Atlantic and Pacific "to be a well constructed railroad, excellent in location, running through a very interesting country, long distances of which are well wooded. The road is well built, laid with fifty-six-pound steel rails thirty feet long, averaging sixteen tiles to the rail, fastened with double angle joints. Bridges are of wood and iron, first-class in every respect, and some of these are marvels of engineering skill. The station and section houses are of excellent quality, and at Winslow is a first-class stone round-house, with nine stalls. The equipment is superior in every respect, passenger cars being of the latest patterns and improvements, with twenty-four-inch paper wheels, Miller platforms and Westinghouse brakes. The locomotives are of the most improved makes. The machine shops at Albuquerque are large enough for all present business, and built upon a plan allowing of enlargement to any extent to meet future wants and growth of the road. Many portions of the road are more or less watered, while others must always depend upon irrigation, which, however, can be readily effected by damming the cañons. In the wooded regions a prominent lumberman, named Ayer, has already started an establishment at Flagstaff, and is now sending finished lumber East and West, and to the Mexican Central railroad. The railroad is well managed. General Manager Smith, at Albuquerque; assistant superintendent Angell, formerly of the Eastern (Mass.) railroad; Chief Engineer Kingman of Brockton, Mass., Treasurer Dennison, formerly of the Connecticut River railroad, and many other officials are the right men in the right place. They have built a first-class railroad in every respect, which will bear minute inspection, and the money which has been furnished them with which to perform this service has been wisely and econom-

ically expended. Every person connected with this line from the president down to the humblest employé, evidence the same enthusiasm and zeal as connected with their enterprise which characterized the men who first 'put through' the Union Pacific. Some portions are remarkable for the scenery through which the road passes, beautiful parks, like those of Colorado, being features in this department. There are also pueblos of Indian tribes, the Navajos and Lagunas, peaceful peoples, like the Zunis. At one point in the valley of the Rio Puerco of the West there is a park of petrified trees the measurements of three of which, taken by Mr. Kinsley, were 62, 70 and 55 feet respectively in diameter."

Chicago, Burlington and Quincy Railroad.

From the following statement, obtained from official sources, we learn that—taking December 31, 1881, as the starting point—the increase of stock and bonds during the year 1882 has been as follows:

Capital stock, December 31, 1881.....	\$55,268,805
Issued on account of K. C., St. Jo. and C. B.....	\$200
Issued for convertible bonds.....	25,500
Issued on account of Denver extension, circular of Sept. 15, 1881.....	7,895,000
Issued under circular of June 1, 1882.....	6,318,600
	14,239,300
Total stock December 31, 1882.....	\$69,508,105
Bonded debt December 31, 1881.....	\$59,122,725
Issued on account of B. and S. W. Railroad Co. (four per cent)....	\$4,300,000
Issued on account of Denver extension (four per cent).....	7,968,000
	12,268,000
Total bonded debt December 31, 1882....	\$71,390,725

The net earnings for ten months ending October 31, 1882, were \$8,291,184.08; the estimated net earnings for November are \$1,052,564.14, and for December \$1,034,000—making the total net earnings for the year \$10,377,748.22, against \$10,602,094.88 for the year 1881.

It should be stated in connection with the increase of bonds and stock above stated, that the stock and bonds issued on account of the Denver Extension were mentioned in the annual report for 1881, but had not been fully paid for, and, therefore, were not included in the balance sheet.

In regard to the \$4,300,000 four per cent bonds issued on account of the B. and S. W. purchase, although the bonds had not been issued on the date of our last report, there was included among the fixed charges for the year 1881 as rental of that road the same sum as is now required to pay the interest on the bonds.

It should also be stated as against the ten per cent increase of stock that we have on hand cash received from that source to pay off the first mortgage eight per cent bonds, amounting to some \$2,500,000. On the subject of earnings it should be added that the net land receipts will be in excess of those of 1881 by some \$150,000, and there will be receipts from interest in excess of those for 1881 by from \$50,000 to \$100,000. It is calculated that the actual net profit for the year 1882 will not vary more than \$50,000 from that for 1881.

The payment of the debt maturing January 1, 1883, will reduce the fixed charges for 1883

\$200,000 for interest, and some \$175,000 for sinking fund payments no longer required, in all say \$375,000.

The earnings on Denver Extension only show for five months since the opening of the road.

Chicago, St. Louis and Illinois Railroad.

THE Illinois Central Railroad Company entered upon possession of the New Orleans line on the 1st inst., and hereafter it will be managed as the Southern division of the Illinois Central. The Company has appointed the late President of the Southern line, James C. Clarke, general manager of the entire Illinois Central property and branches. We are informed that the first report of the managers of the Chicago, St. Louis and New Orleans Railroad, which is in course of preparation, will show that the entire superstructure of that road has been replaced, and that the principal of the indebtedness has been reduced nearly \$1,500,000, leaving the present debt upon this division at \$17,000,000, of which \$10,500,000 is in bonds bearing five per cent interest. The net reduction in the annual interest charge from the year 1876, when the foreclosure proceedings as to this property were commenced, is upwards of \$350,000 per annum.

Thus the Illinois Central Railroad Company comes in possession of a property laid with steel—a line in thorough order—in fact, a first-class railway with very moderate fixed charges—it has purchased of the capital stock of this Company, beyond the 66,700 shares which were stated to be the property of the Illinois Central Company in the last annual report, an additional 33,000 shares by issuing Illinois Central four per cent obligations, which are now known in the market as leased line stock certificates.

It is proposed to divide among the Illinois Central shareholders the annual dividend earned upon this Southern property. The earnings per mile of road are stated to be equal to those of the Illinois Central itself and that the Illinois Central is in exceptionally good condition, having paid off recently \$2,500,000 of its debt—six per cent bonds due in 1890 having been called in at ten per cent premium; that the Illinois Central has spent about \$3,500,000 upon betterments on its own road and branches in Illinois without any increase to its capital.

The original investment of the Illinois Central in the Southern line was in 1873, \$4,800,000, and it is said that the securities on hand now owned by the Illinois Central Company will reimburse this sum with a handsome profit, and that it is benefitted by the Southern division to the extent of \$500,000 or \$600,000 in its net earnings, which is about two per cent on its shares.

THE Orang-Sakays, a tribe of nomadic savages who inhabit the Malay peninsula, have a curious marriage custom. In the presence of the relatives the bride runs into the woods. After a little while the bridegroom runs after her. If he finds and catches the girl within a certain time, she becomes his wife; if not, he gives her up.



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We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing for our  
columns any items of personal information, which may  
come to their knowledge, and are adapted to this de-  
partment. We aim to record all new railway enter-  
prises in the United States and Canada, and to note  
the progress of construction on all new roads and exten-  
sions; and we request all concerned in railway building  
to give us early information regarding the above, that  
our reports may be as complete as possible.

Subscribers are requested to report to our office any  
irregularity in receiving the JOURNAL.

Contributed articles relating to Railroad matters gen-  
erally, Mining interests, Banking and Financial items,  
Agricultural development, and Manufacturing news, by  
those who are familiar with these subjects, are especial-  
ly desired.

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## PRINCIPAL CONTENTS.

Organization.....	1
Incorporation.....	1
Construction.....	1
Tennessee's Renewed Disgrace.....	2
Atlantic and Pacific Railroad.....	3
Chicago, Burlington and Quincy Railroad.....	3
Chicago, St. Louis and Illinois Railroad.....	3
EDITORIAL:—	
A New Departure.....	4
Railroad Progress in 1882.....	4
Railroad Medical Service.....	5
Our Canadian Letter.....	6
The Steel Rail Plant of the Future.....	7
Railroads of Wisconsin.....	7
Stock Exchanges and Money Market.....	8-10
Railroad and Canal Dividend Statement.....	12
Railroad Earnings—Monthly.....	14
Imports of Foreign Dry Goods.....	16
Iron Direct from the Ore.....	16
Railroads of Michigan.....	18
Fort Worth and Denver City Railway.....	20
List of Purchasing Agents.....	22

## A NEW DEPARTURE.

A RECENT issue of this paper contained an  
item of news recording what, we trust,  
is the germ of a great improvement in a di-  
rection abundantly needing it. An organiza-  
tion has been formed recently under the name  
of the American Street Railway Association,  
whose objects are to cultivate a spirit of frater-  
nity among those connected with street rail-  
way management, and to promote progress and  
improvement in the methods of operation.  
Boston was the birthplace of this organiza-  
tion, which was completed in a sanguine spirit,  
and has before it, we trust, a long life of use-  
fulness.

With the first of the objects named the  
great world outside has nothing to do, except-  
ing to give general encouragement to the spirit  
of fraternity among men employed in one way,  
provided they do not band themselves as  
brothers, against the public interest. The  
promise implied in the second object of the  
organization is of a liberal character, is  
one which directly relates to the public well-  
fare, and one for which there is abundant occa-  
sion.

The complaint is frequently seen, that while  
the rest of the world is making progress, horse-  
cars are about the same comfortless places  
which they were upon their first introduction.  
They are certainly better-looking as a rule, but  
generally do not run more smoothly, and are  
not better upholstered or lighted than nearly  
a generation ago. A very few of them are  
heated during cold weather, and indecent  
crowding is as marked a feature in their use  
now as ever before. They are run with a  
margin of profit which admits of at least an  
average progress with other means of locomo-  
tion; but while steam cars and boats are con-  
tinually being improved, horse-cars are left be-  
hind in the commendable race. Taking an ex-  
ample in New York city, the superiority of the  
cars of the elevated railroads to those running  
below on the level of the street is very striking,  
and our friends of the American Street Rail-  
way Association will, we are sure, pardon us  
for emphasizing the necessity of an organiza-  
tion looking less to the advantage of companies  
themselves, in the first place, than to the bring-  
ing the service up to an equality with the re-  
quirements of the times. As matters now are,  
the public have the right to grumble, and the  
true policy of the companies is so far to im-  
prove their tracks, cars, horses and the service  
generally as to make complaint unreasonable.

With the view to assist this desirable con-  
summation, the proprietors of the AMERICAN  
RAILROAD JOURNAL have determined upon giving

prominence in its columns to information on  
the horse-car system of this country, Canada  
and elsewhere.

Note will be made of improvements invented,  
projected and applied, and communications on  
the subjects involved are invited and will be  
treated with the intention to promote their ut-  
most usefulness. Our cordial goodwill attends  
the new organization above named. Should its  
members keep steadily in mind the provision  
of better accommodation, the response from a  
generous public will prove to them of such an  
advantageous character as to afford the best  
help to the "spirit of fraternity" desired by  
its promoters. When all alike enjoy a better  
return, with the consciousness that the indis-  
pensable service they furnish is as good as it can  
be made, the foundation of harmony and  
brotherly relations between its members will  
be deeply and strongly laid.

## RAILROAD PROGRESS IN 1882.

THE year 1882, just closed, will be signal-  
ized as high water mark in railroad con-  
struction. The mileage figures compiled by  
our contemporaries show thus far about 11,000  
miles constructed, but when the full statements  
are received they will doubtless show that all  
of 12,000 miles of track have been laid, inas-  
much as short pieces of spur track and track  
laid to furnaces, mines, manufactories and  
mills are not even reckoned in the current  
statements.

The immediate stimulus of this prodigious  
exertion in the improvement of our railroad  
communication was due to the succession of  
short crops in Europe two and three years ago,  
which resulted in an inordinate demand from  
this country, and in turning the balance of  
trade in our favor, and the consequent impor-  
tation of large amounts of gold. The lending  
rate for money sank to much less than six per  
cent, and prices of first-class securities began  
to be scaled upon this basis. The sudden rise  
in market values of good railroad securities,  
and particularly railroad bonds, as might have  
been expected, led to a multiplication of these  
securities. So eager was the market at one  
time for bonds and stocks that construction  
companies were started to build roads (it mat-  
tered not particularly where) for the profits to  
be gained by the construction; that is to say,  
the proceeds of bonds based upon new road  
could be sold for more than the entire cost of  
the works. If the roads had been well located,  
it does not follow that there would be any fraud  
in this, because roads running through a rich  
country adapted to settlement or abounding in  
valuable minerals could be made to yield an  
income upon even extravagant cost. It is the

peculiarity of railroad investments that they have future possibilities out of proportion to their first cost. Trade, settlement, agriculture and various industries gather along their lines and convert them into centers of commerce.

It is a fortunate event for the country at large that the money market has been more stringent of late, and has snuffed out of existence many of the ambitious projects which were being prepared for the market. It will be well for the country to have a rest for the next few years, as far as new railroad enterprises are concerned. The existing systems will need to be pieced out, here and there branches built, and gaps closed up. Within our own territory it may be said, in general terms, that we have a sufficiency of railroads for the present demands, and for a few years to come; not so, however, for the territory lying to the north and south of us. Mexico is an inviting field for railroad capital, and several good lines are under way in that Republic.

The limitation (for everything must have its limits) upon railroad investments is found in the tendency to duplication of lines which have good business. Among the roads which have suffered in that respect are those between New York and Philadelphia, those between Buffalo and Chicago, and those between the Ohio River and New Orleans; and now it is proposed to duplicate those between Philadelphia and Baltimore, those between New York and Boston, and the three roads between New York and Buffalo. The owners and managers of important lines will hereafter have to count among the dangers to be met with that of having other roads built alongside of them which they must either buy or enter into active competition with.

### RAILROAD MEDICAL SERVICE.

BY S. S. HERRICK, M. D.

SECRETARY OF BOARD OF HEALTH, STATE OF LOUISIANA.

#### THE AUSTRO HUNGARIAN SYSTEM.

I AM indebted to the U. S. Consul-General at Vienna, Hon. James R. Weaver, for some printed documents, furnished him by Dr. P. F. Kupka, of that city, who is greatly interested in railway matters. These documents relate to the medical service on the Imperial Northwest Railway and the Imperial North and South German Railway. Railroad physicians receive permanent appointments after three months' trial, and three months' notice must be given by the party desiring to terminate the engagement.

No one is received into permanent employment without passing a physical examination by a company's physician. This has reference in all cases to the general health and constitu-

tion of the candidate, and his aptitude for the particular duties which he is to undertake. Printed forms are filled out, to indicate the condition of the respiratory and circulatory organs, the degree of acuteness in the organs of sight and hearing, etc. Whenever it is necessary to employ such as cannot pass the examination, they are not entitled to medical relief. It is to be presumed that the tests of sight and hearing are stricter with those engaged in the movement of trains, than those belonging to other departments of service; but none are admitted to any kind of employment who are liable to become a charge upon the medical department by reason of any constitutional infirmity; the reports of these examinations are regarded as confidential communications by the administration. All employes of these companies belong to an association for mutual relief in case of sickness or accident. A man's family also are entitled to medical attendance, when living in his house within a definite short distance of the residence of a company's physicians; but the family are not supplied with medicines by the association. All members contribute at the rate of two Kreuzers (two cents) to each gulden (\$1.67) of their pay. Each physician is assigned to a particular section of the road, and is summoned in case of accident on any portion of his territory. He must also be in readiness to receive patients at certain hours, or to attend them at their domiciles when they are too sick to come to him, in case they reside within a reasonable distance.

Employes have the option of being attended by private physicians at their own expense, but the company's physician of that district must acquaint himself with the progress of the case, in order to report it to the man's foreman or superior officer. This plan secures the timely return of the man to duty, after his discharge from treatment. Here it may be observed that not the least gain to the company in a well-organized medical department, is the supervision which it exercises over the men in sickness. Aside from the greater interest felt by their own physician, to have the man restored to health as soon as possible, it is moreover made this duty to see that there is no malingering.

At all railway stations are kept relief-chests, containing such surgical instruments, appliances and dressings as might be needed in case of accident upon the line, and certain medicines and restoratives. These are in charge of the physician of that district.

Each physician is charged with sanitary oversight of the buildings and grounds at his station, and is expected to give general advice to employes relative to their personal hygiene. He also delivers some plain lectures to the men of his district, which they are required to attend, in order to be instructed in the use of instruments, dressings and medicines, so as to act in emergency while waiting the arrival of the doctor, and assist him in case of serious disaster.

No mention is made of provision for the families of those who die of sickness contracted in the line of duty, or from accidents in service; nor of any pension or annuity for support in old age or in case of permanent disability through injury or sickness.

There seem to be no regulations for the transportation of live-stock, to prevent overcrowding and undue deprivation of food and water, and to exclude sick animals from railroad cars; though it is evident that a well-organized medical staff might be serviceable in preventing these evils. No mention is made of government control in any of the regulations of the medical service, and it is to be presumed that they originated with the administration of the companies. It is also probable that the service is nearly, if not quite, self-supporting, as the contribution from the employes is a larger percentage than is required of those who man the water-craft of our merchant marine, and larger than that retained from the pay of men on the Union Pacific and Central Pacific railways of this country. A contribution of fifty cents a month per capita has been found ample foundation for the current expenses of the U. S. Marine Hospital Service and of the medical service of the above railways. The larger contribution on the Austro-Hungarian roads would probably be sufficient to meet the additional expense of attending the families of employes.

Such provision for the relief of a man's family in sickness is an advantage which must be highly appreciated by him, when he compares his situation with that of others in his own station but under different employes. But the advantage is not his exclusively. By offering such benefits, the company can obtain better work and at lower wages. Likewise the medical man is a gainer, for he is sure of compensation from the company; and he consequently gives the best attention to his duties. Thus an arrangement which brings order out of chaos, offers care for neglect, promptness for delay, certainty for doubt, confidence for distrust, willingness for reluctance, interest for indifference, is found to benefit all concerned. The company gets surer and better work without increased cost; the men enjoy an easier and more contented lot; the physician realizes surer and more punctual fees; and the public, who have the most at stake and the least to say in the matter, obtain such speed, punctuality and safety of traffic as only picked and fairly used men will render.

[TO BE CONTINUED.]

### Sleeping-Car Decision.

A DECISION of interest to the traveling public has just been rendered by the Supreme Court of Ohio. A person by the name of Walrath occupied a sleeping-berth in a train on the Cleveland, Columbus, Cincinnati and Indianapolis Railway. The berth fell, and Walrath sued the company for the injuries he received. The latter based its defense upon the plea that it had entered into no contract with the plaintiff, and that he must look to the sleeping-car company for redress. The judgment was given against the defendants, however, and the Supreme Court sustained the verdict. Judge Okey, in giving his opinion, said: "We have no hesitancy in saying that in the absence of notice that the company will not be liable for defective appliances in the sleeping-car, or negligence of servants of the sleeping-car company, a passenger may well assume that the



whole train is under one general management. How far a railway company may, by agreement with a sleeping-car company, known to the passenger, exonerate itself from liability for such injuries, is a question concerning which we express no opinion."

## CANADIAN DEPARTMENT.

Mr. JAMES J. WHITE, Ottawa, Canada, writer of "Our Canadian Letter," acts as agent for the AMERICAN RAILROAD JOURNAL COMPANY, in Canada. He is authorized to receive, in behalf of the company, subscriptions and advertisements for this journal; also news of the character which he can utilize in the preparation of his Letter, or send to us for use elsewhere within these columns. He respectfully invites information concerning Railroad matters generally, Mining, Banking, Finance and Manufactures.

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

#### OFFICIAL NOTICES OF CHARTERS, ETC.—RAILROAD, PERSONAL AND OTHER NOTICES.

During 1882 the number of patents issued was 2,135 against 1,732 in 1881. The receipts for 1882 were \$60,771.19 against \$52,856.65 in 1881.

Mr. Eugene M. Cole, of the firm of Benedict & Cole, 63 Broadway, N. Y., is in Ottawa, looking after some valuable phosphate lands owned by his firm and the Canadian Mining Company in the County of Ottawa.

Official notice has been given by the government permitting the increase of the capital stock of the Canadian Locomotive and Engine Company to \$300,000.

The grand total of the value of goods entered for consumption in the Dominion of Canada (exclusive of British Columbia) during the month ending November 30, 1882, was \$9,236,068, and the duty collected thereon \$1,709,878.42. The total of goods exported from the Dominion of Canada (exclusive of British Columbia) for November, 1882, was \$13,247,224, of which \$12,385,606 was the produce of Canada, and \$861,618 the produce of other countries.

The Saskatchewan and Peace River Railway Company, give notice of application for a charter.

Notice is also given by the Credit Valley Railroad Company for an Act. Notice is hereby given that application will be made, at the next session of the Parliament of Canada, for an Act to incorporate a company for the purpose of constructing and working a line of railway to be known as "The Great Northwestern Railway of Canada," branching off from the Canada Pacific Railway at some point between Swift Current and Medicine Hat, and running thence in a northwesterly direction crossing the North Saskatchewan River at Edmonton or at some point to the eastward thereof, and continuing in the same general direction to the Peace River, at the mouth of the Smoky River, or at some point further down the said Peace River; with power also to build and operate a branch line of such railway to connect with the navigable waters of the Athabasca River.

The Merchants' Bank of Halifax, have de-

clared a dividend of three and one-half per cent on paid-up capital for current half year, payable at the banking house on and after January 22, next.

The Banque de St. Hyacinthe declare a dividend of four per cent, payable on and after February 1, 1883.

The Bay of Quinte Railroad & Navigation Company, give notice of annual general meeting on February 5, next, at offices in Desoronto, to elect directors, and for other general purposes.

Notice is hereby given that application will be made to the Parliament of Canada, at its next session, for an Act to incorporate "The Fuller Electric Light Company of Canada." With power, among other things to manufacture and vend electric machinery and apparatus, and to supply electricity for the purposes of light, heat and power, and with power to occupy for that purpose streets and public places, etc., etc.

The Credit Valley Railway ask that the company may amalgamate or unite with, or lease their railway to the Ontario and Quebec Railway Company, or enter into joint working arrangements with the said companies, or either of them, and also lease or enter into joint working arrangements with the London Junction Railway, without affecting the running powers granted by the third section of the said Act to the Credit Valley Company, or any agreement or award made in pursuance thereof.

The Ontario Pacific apply for power to extend their line from French River to Sault St. Marie. Also the Fort McLeod and Northeastern Railroad Company give notice of application for a charter.

#### TERRITORIAL DIVISIONS IN THE NORTHWEST.

POST-OFFICE DEPARTMENT,  
OTTAWA, 13th Dec., 1882.

1. The extensive range of country lying between the western limits of the Province of Manitoba and the eastern boundary of British Columbia, has been formed into four Territorial Divisions, named Assiniboia and Saskatchewan, immediately contiguous to Manitoba, and Alberta and Athabasca further west, and between the other two divisions and British Columbia.

Letters and other mail matter therefore intended for any settlement or place in the Northwest country thus divided, should be addressed to the Territorial Division in which it may be situated.

As Winnipeg, however, is the distributing Postoffice for the whole region, such letters, etc., should invariably have "via Winnipeg" as part of the direction.

For example, a letter for Battleford should be addressed:

Mr. A. B.,  
Battleford,  
Saskatchewan Territory,  
via Winnipeg, Can.

Postmasters should instruct all persons corresponding with the northwest territories through their offices, to address their letters, etc., as far as practicable, in accordance with these directions.

The principal postoffices already estab-

lished in the above named districts are as follows:

NAME OF POSTOFFICE.	TERRITORIAL DIVISION.
Battleford.....	Saskatchewan.
Broadview.....	Assiniboia.
Carleton.....	Saskatchewan.
Edmonton.....	Alberta.
Grandin.....	Saskatchewan.
Moosomin.....	Assiniboia.
Oak Lake.....	do.
Prince Albert.....	Saskatchewan.
Qu'Appelle.....	Assiniboia.
Regina.....	do.
St. Albert.....	Alberta.
Stobart.....	Saskatchewan.
Touchwood Hills.....	Assiniboia.

#### THE POSTMASTER GENERAL.

##### THE KNIGHT OF RAVENSCRAG.

On Wednesday last, the mortal remains of Sir Hugh Allan were laid in their resting place in Mount Royal Cemetery. The funeral cortege was the largest and most imposing ever seen in Montreal.

There is an improvement in the Montreal Stock Market. Commercial borrowers find no difficulty in obtaining loans; prime mercantile paper is readily discounted at 7@7½ as to name and date; and 6@6½ for call and short dated loans. Sterling exchange is flat, and little or no business doing.

When the new connection between the North Shore and Grand Trunk is built, the trains on the former will enter and depart from Montreal at the Bonaventure dépôt.

The Canadian Pacific is looking for a dépôt site in the west end of Montreal.

Notwithstanding what has been considered an adverse report by Mr. Kennedy, the chief engineer of the harbor, Mr. Bateman, the engineer of the Scherer scheme, recommends his company to proceed and get a charter.

#### \* MARITIME PROVINCES.

The fact that the Grand Trunk, controlling both operating lines between Montreal and Quebec, should give an impetus to the construction of the Megantic line (the International, owned by Hon. J. H. Pope), which, as I mentioned in a former note, as being the shortest possible line between Montreal and the seacoast. The Canada Pacific will have to secure connection with the International, in fact they will be compelled to in their own interests and the provinces generally.

It is understood that the manager of the St. John and Maine Railway, has been requested by the directors in London, to have a thorough inspection of the company's track, buildings and plant, etc., and to send the report at once to England, so that immediate provisions can be made for putting the road in first class order. It is proposed to lay steel on the sixty miles now laid with iron, and generally to add such improvements as the increasing traffic of the road requires.

The stock of deals held in St. John for European markets amounts to 50,000,000 feet.

The New Brunswick Cordage Works at Port land, were totally consumed on Wednesday last, and the loss is \$80,000, partially covered by insurance. W.

OTTAWA, January 4, 1883.

The largest suspension bridge will be the one now building between this city and Brooklyn. The length of the main span is 1,595 feet six inches; the entire length of the bridge 5,989 feet.

## The Steel Rail Plant of The Future.

BY JACOB REESE.

STEEL RAILS have heretofore been made in this country by what is known as the Acid Process. Its practice may be briefly described as follows. The ore, limestone and fuel are placed in a blast furnace, therein smelted, and the resulting metal run into pigs. These pigs when cold are then put into a cupola with coke and melted. The molten metal is then run into a converter lined with garrister, and then blown with an air blast until the silicon and carbon are burned out of the metal. The converter is then turned down and manganese added to deoxygenize and recarbonize the bath, after which the metal is poured into ingot molds. The ingots are taken from the molds, placed on a car and taken to and placed in a heating furnace, and after being in the furnace for from one to two hours the ingots are taken to the blooming mill and rolled into a bloom 7x7. This bloom is then taken to the shears and cut into four or five lengths of sufficient weight to each make a thirty-foot rail. These rail blooms are then put into a furnace and reheated and rolled into a rail. In this practice the steam required for blowing the blast furnaces is raised by utilizing the heat derived from the waste gases of the blast furnaces; but the steam required for blowing the cupola and converter, for rolling and manipulating the metal, is all generated by the combustion of coal under the boilers. The ingots and blooms are also heated by the use of coal in the furnaces or in the gas producers. In this Acid Process (so called because the converter being lined with garrister, which is composed principally of Silicic Acid, the Slag is an Acid Slag) the phosphorus cannot be eliminated; hence non-phosphoric ores are required. Such ores cost in Pittsburgh during 1882 \$9 per ton or \$17 for sufficient to make a ton of rails.

In the steel rail plant of the future the blast furnaces will be located near to the converter and *Phosphoric ores* will be used which can be put in Pittsburgh at from \$4 to \$5 per ton, or sufficient ore to make a ton of metal for \$9. This ore will be smelted in the blast furnace and the resulting metal conveyed directly into the converter, thus saving the cost of molding, handling and smelting the pigs, which amounts to \$2 per ton.

The converter will be lined with a calcareous or other basic lining, and a *basic slag* will be produced, which with other essential conditions the metal will be desilicized, decarbonized and dephosphorized, deoxygenized, recarbonized and poured into the ingot molds. This is the *basic process*, so called because the metal is worked in a basic slag, that is a slag whose base is a metal. Now by this basic process we can use the cheap phosphoric ore, a saving of \$8 per ton, the difference between \$17 cost of sufficient non phosphoric, and \$9 cost of the phosphoric ore.

When the ingots are cast the temperature of the metal is about 4,000 degrees F; the molds being cold, the metal chills rapidly. Now by taking the ingots from the molds immediately, only about three-fourths of an inch of the metal has solidified on the outside of the ingot, while

the interior is still in a molten state. The outside being at a temperature of 1,000 degrees F.; while the mass of the interior is 3,500 degrees F; and as we only need a uniform temperature of 1,500 degrees for rolling, it will be seen that the ingot when taken from the mold possesses more than the required units of heat required for rolling. To utilize this initial heat, and dispense with the ingot heating furnace with its cost of fuel, brick, clay, sand, labor and waste of metal, which amounts to \$2 per ton, I have provided an ingot regenerator into which the ingots are placed immediately after being taken from the molds. This regenerator is placed on a car, and when filled, caps are placed over the ingots and the regenerator is thus sealed to exclude the air and retain the heat. In twenty minutes' time the temperature of the ingots is equalized, and they may be taken to the blooming mill and rolled, thus saving \$2 per ton.

When the ingot is rolled into a bloom, the bloom is run directly forward through a pair of shears and the bad end cut off; The bloom is then run forward into the roughing rolls and roughed, and from there to the finishing rolls and finished into a rail; It is then passed to the saws and cut into two, three, or four rails according to its weight; the rails are curved and pushed into the flue of a suitably constructed steam boiler and steam generated by the rails while cooling. The saving in the rolling department will be fully \$1.50 per ton.

The blast furnace slag will be run into slag cars; these slag cars will be run into the flues of steam boilers designed for the purpose, and steam generated from the waste heat of the cooling slag; the saving in raising steam will be fifty cents per ton.

To sum up the economy of the basic process, practiced with the methods and appliances thus proposed by my several inventions:

Basic Process.....	\$8.00
Working Molten Metal direct from the Blast furnace.....	2.00
Ingot Regenerating.....	2.00
Direct Rolling.....	1.50
Steam from waste heat.....	50
	\$14.00
Less extra interest on plant and Basic linings, and allowance.....	4.00
Net profit per ton over old plant and process....	\$10.00

It will be observed that in the practice of the new basic plant, there will be no casting house, no cupolas, no heating furnaces, no coal-consuming steam boilers, no gas producers and no fuel used in the production of steel rails except that employed in the blast furnaces.

This system I have covered by nearly one-hundred inventions, and added to the great economy. The *basic steel* will be far superior to that heretofore made by the Bessemer Acid Process, as the basic steel will be practically free from silicon, phosphorus and manganese, and be more like tool steel, *pure iron and carbon*.

My inventions are now appreciated in this country, several steel rail plants are being remodeled, and soon basic steel rails, as well as basic steel nails, sheets, plates, girders, structural shapes, wire and merchant shapes, will be put on the market. I take great pleasure in reducing the cost of railroad construction and maintenance of way, by producing a cheaper

and better metal than can possibly be secured without my inventions.

PITTSBURGH, DEC. 22, 1882.

## Railroads of Wisconsin.

FROM the annual report of the Railroad Commissioner of Wisconsin we learn that the roads operated in whole or in part in that State at the close of the year ending June 30, 1882, were the Chicago, Milwaukee and St. Paul, the Chicago and Northwestern, the Chicago, St. Paul, Minneapolis and Omaha, the Wisconsin Central, the Milwaukee, Lake Shore and Western, the Green Bay, Winona and St. Paul, the Milwaukee and Northern, the Fond du Lac, Amboy and Peoria (narrow gauge), the Prairie du Chien and McGregor, the Northern Pacific, the Wisconsin and Michigan (operated by Milwaukee and Northern), the Wisconsin and Minnesota, and the Chippewa Falls and Western (operated by the Wisconsin Central), and the Chippewa Falls and Northern (operated by the Omaha line).

The report shows, first, figures for Wisconsin alone; and, second, figures for the whole of the lines reporting. Passenger earnings were: for Wisconsin, \$4,597,161; for the whole lines, \$12,026,088; freight earnings for Wisconsin, \$13,062,242; for the whole lines, \$35,593,828; earnings from mails, express and all other sources for Wisconsin, \$1,056,630; for the whole lines, \$2,499,127—total earnings, Wisconsin, \$18,765,428; whole lines, \$50,179,300.

The number of miles of road on which earnings are estimated: Wisconsin, 3,327; whole lines, 9,175; operating expenses, Wisconsin, \$10,276,746; whole lines, \$26,900,945; earnings over operating expenses, Wisconsin, \$8,488,681; whole lines, \$23,278,352; percentage of operating expenses to earnings, Wisconsin, 54; whole lines, 53; total income on whole lines from all sources, \$51,083,799; total income in Wisconsin from all sources, \$49,669,927; passengers carried, Wisconsin, 3,611,973; passengers carried one mile, Wisconsin, 162,231,759; train mileage of the year, Wisconsin, 14,443,635; total earnings compared with previous years: In 1881, Wisconsin, \$15,478,172, whole lines, \$39,298,268; 1881, in Wisconsin, \$18,765,428; whole lines, \$50,179,300.

The equipment for 1882 is reported: St. Paul, 583 locomotives, 227 passenger cars, 164 mail, baggage and express cars, 39 parlor or sleeping cars, 17,600 freight cars, 354 other cars, Northwestern, 557 locomotives, 235 passenger cars, 117 baggage, mail and express cars, seven parlor or sleeping cars, 18,281 freight cars, 4 dining cars and 4 officers cars.

The rate per passenger per mile on all the roads averages 2.8 cents; number of tons of freight carried in Wisconsin during the year, 549,932; rate per ton per mile, 1.6 cents; passenger earning per mile, \$1.351; freight earnings per mile, \$3.925; total earnings per mile in Wisconsin, \$5.639; operating expenses per mile, \$3.088; net earnings per mile, \$2.550.

NEWSPAPER advertising is the most energetic and vigilant of salesmen, addressing thousands each day, always in the advertiser's interest, and ceaselessly at work seeking customers from all classes.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Jan. 3.

	Th.23.	F.29.	Sat.30.	M.1.	Tu.2.	W.3.
Adams Express.....	133			92	134	
Albany and Susq.....	126					
1st mortgage.....						
2d mortgage.....	106					
American Express.....	92	92	90½		91	
Burl., C. R. & Nor.....	82½					
1st mortgage 58.....		100½	100½		100½	
Canada Southern.....	67½	67½	67		66½	67
1st mortgage guar.....	98½	98½	98½		96½	96½
Central of N. Jersey.....	70	70	69½		68½	69½
1st mort. 1890.....						
7s, consol. ass.....				108½	109	
7s, convertible ass.....						
7s, Income.....				81		
Adjustment.....						
Central Pacific.....	86½	86½	86½		85½	86½
6s, gold.....		106½	116½		113½	x
1st M. (San Joaquin).....						
1st M. (Cal. & Or.).....						
Land grant 6s.....						
Chesapeake & Ohio.....	22	22½			22	
1st pref.....	33½		33½		31½	
2d pref.....	24½		24½		24½	
1st mort., series B.....	88½		88½		89½	
Chicago and Alton.....	132½		134		134½	134½
Preferred.....						
1st mortgage.....						
Sinking Fund.....						
Chi., Bur. & Quincy.....	123½	124	122		120½	122½
7s, Consol. 1903.....						
Chi., Mil. & St. Paul.....	106½	105½	105½		103½	105½
Preferred.....	121½		120½		119½	120½
1st mortgage, 8s.....						134
2d mort., 7 3-10s.....						
7s, gold.....					128½	x127
1st M. (La. C. div.).....						
1st M. I. & M. div.....						
1st M. (I. & D. ext.).....						
1st M. (H. & D. div.).....						
1st M. (C. & M. div.).....	123				125	
Consolidated S. F.....	125½				123	
Chi. & Northwestern.....	136	136½	135		132½	134½
Preferred.....	153	153	150½		148	148½
1st mortgage.....					108	
Sinking Fund 6s.....						
Consolidated 7s.....						
Consol. Gold b'ds.....					124½	
Do. reg.....						
Chi., R. Isl. & Pac.....	127½	127½	125½		124½	125½
6s, 1917, c.....					126½	x
Clev., Col. & Ind.....	80½				80	
1st mortgage.....						
Clev. & Pittsburg gr.....					140	
7s, Consolidated.....	127					
4th mortgage.....						
Col., Chi. & Ind. Cent.....					3½	
1st mortgage.....						
2d mortgage.....						
Del. & Hud. Canal.....	108½	108	108		107	108
Reg. 7s, 1891.....		116				
Reg. 7s, 1884.....						
7s, 1894.....						
Del., Lack. & Western.....	128½	128½	128		127	128½
2d mortgage 7s.....						
Consol. 1907.....					129	
Erie Railway.....	136					
1st mortgage.....						
2d mort. 5s, ext.....						
3d mortgage.....		102½			102½	
4th mort. 5s, ext.....						
5th mortgage.....						
7s, Consol. gold.....						
Great West. 1st mort.....	107½					
2d mortgage.....		98½	99		99	
Hannibal & St. Jo.....						
Preferred.....	77½				74	75
8s, Convertible.....						
Houston & Tex. Cen.....	76					
1st mortgage.....		111½				
2d mortgage.....	119½					
Illinois Central.....	141½	142½	142½		142	142½
Lake Shore & Mich So.....	116½	113½	x113		111	112½
Consol. 7s.....						
Consol. 7s, reg.....	120					
2d Consolidated.....					123½	
Lch. & W. B. con. ass.....	101					
Long Dock bonds.....						
Louisville & Nash.....	53½	53	53		52	53½
7s, Consolidated.....						
Manhattan.....	45	48	47			
1st pref.....					84½	
Met. Elevated.....					83	83
1st mortgage.....	102½		102		99	99½
Michigan Central.....	100½	98½	x98		96½	98
7s, 1902.....					124½	125
Morris & Essex.....				123	123½	122½
1st mortgage.....						

2d mortgage.....						
7s of 1871.....					121½	
7s, Convertible.....						
7s, Consolidated.....					122½	
N. Y. Cen. & Hud. R.....	128	126½	126		125½	126½
6s, S. F., 1883.....	101½				101	
6s, S. F., 1887.....						
1st mortgage.....	134				130	
1st mortgage, reg.....						
N. Y. Elevated.....					118½	114
1st mortgage.....						
N. Y. & Harlem.....						
Preferred.....						
1st mortgage.....					128	
1st mortgage, reg.....						
N. Y. Lake Erie & W.....	39½	39½	38½		38½	39½
Preferred.....	86½	87	86½		80	82½
2d Consolidated.....	96½	96½	96½		96½	96½
New 2d 5s fund.....						
N. Y., N. Hav'n & Hart.....	177					
North Mo. 1st mort.....						
Northern Pacific.....	46½	46½	47½		47½	47½
Preferred.....	84½	85½	85		84½	85½
Ohio & Mississippi.....						32½
Preferred.....						
2d mortgage.....						
Consolidated 7s.....						
Consol. S. Fund.....					116½	
Pacific Mail S. S. Co.....	43½	42½	41½		40½	41½
Pacific R. R. of Mo.....						
1st mortgage.....						
2d mortgage.....						
Panama.....						
Phila. & Reading.....	52½	52½	53½		52½	53½
Pitts., Ft. W. & Chi. gtd.....	134½				135	
1st mortgage.....						
2d mortgage.....						
3d mortgage.....	130					
Pullman Palace Car.....	123½	122½	123½		122½	122
Quickkill'r Min'g Co.....						
Preferred.....	40½					
St. Louis & San Fran.....						
Preferred.....	52½					
1st Preferred.....	100				98	
St. L., Alt'n & T. H.....	46½	47	89		50	49
Preferred.....	89		89		90½	90
1st mortgage.....						
2d mort. pref.....	111½					
Income bonds.....						
St. L., Iron Mt. & S.....						
1st mortgage.....						
2d mortgage.....			105		105	
Toledo and Wabash.....						
1st mortgage.....	107½					
2d mortgage.....	99					
7s, Consolidated.....						
St. Louis Division.....	102½					
Union Pacific.....	102½	102½	102½		101½	103½
1st mortgage.....	116½	116½			113½	x114
Land Grant 7s.....						
Sinking Fund 8s.....	118					
United States Ex.....			63			
Wabash, St. L. & Pac.....	35½	35½	34½		33	34½
Preferred.....	54½	54½	54		52½	54½
New mort. 7s.....						
Wells-Fargo Ex.....	130					
Western Pacific b'ds.....						
Western Union Tel.....	81½	81½			80½	80½
7s, S. F. conv., 1900.....						

## Boston Stock Exchange.

Closing Prices for the Week Ending Jan. 3.

	Th.28.	F.29.	Sat.30.	M.1.	Tu.2.	W.3.
Atch., Top. & San. Fe.....	84½	85½	85½		85½	85½
1st mortgage.....						
Land Grant 7s.....						
Boston & Albany.....	172½	173	173½		174	174
Boston and Lowell.....	102	103			102	101
Boston & Maine.....					148½	149
Boston & Providence.....					161	160½
Bos'n, Hart. & Erie 7s.....						
Burl. & Mo. R. L. G. 7s.....						
Burl. & Mo. R. in Neb.....	115½					
6s, exempt.....						
4s.....						
Chi., Burl. & Quincy.....	123	124	122½		121½	122½
Cin., Sand & Clev. (\$50).....					24½	
Concorc (\$50).....						
Connecticut River.....						
Eastern.....	35	34½			35	36
New 6s, Bond.....	109½		109½			

Fitchburg.....						
N. Y. & New England.....	49	49	48½		48½	49
7s.....					115½	115½
Northern N. H.....					109	
Norwich & Worcester.....						
Ogden & Lake Cham.....						
Old Colony.....			134½		134½	134½
Ph., Wil. & Balt. (\$50).....			62			
Portl'd, Saco & Ports.....						
Pueblo & Ark Val 7s.....						
Pullman Palace Car.....	124½	124	123			123
Union Pacific.....	102½	103½	102½		101½	102½
6s.....						
Land Grant 7s.....						
Sinking Fund 8s.....		115½			115½	
Vermont & Mass.....						
Worcester & Nashua.....						
Cambridge (Horse).....					84	
Metropolitan (Horse).....						
Middlesex (Horse).....		103			103	
Cal. & Hecla Min'g Co.....	250	250			251	252
Quincy.....					63	63

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Jan. 2.

	W.27.	Th.28.	F.29.	Sat.30.	M.1.	Tu.2.
Allegh'y Val. 7 3-10s.....						
7s, Income.....			48			
Buff., Pitts & West.....	18½	18½	18½	18½		18
Camd'n & Am. 6s, '83.....						
6s, 1889.....		112				107½
Mort. 6s, 1889.....				112		112
Camden & Atlantic.....						
Preferred.....						
1st mortgage.....						
2d mortgage.....						
Catawissa.....						
Preferred.....			53			54½
2d pref.....						
7s, new.....						
Del. & Bound Brook.....						
7s.....						
Elmira & Williams p't.....	40½					
Preferred.....						
Hunt. & B. Top Mt.....	15					
Preferred.....						
2d mortgage.....						
Lehigh Navigation.....	38½	38½	38½			38½
6s, 1884.....						
Gold Loan.....		109				
Railroad Loan.....						
Conv. Gold Loan.....						
Consol. Mort. 7s.....						
Lehigh Valley.....	63½	63½	63½	63½		63
1st mort. 6s, coup.....						
1st mort. 6s, reg.....						
2d mort. 7s.....						
Consol mort. 6s.....						
Consol.mtg.6s,reg.....						
Little Schuylkill.....		59½				
Minehill & Sch. Hav'n.....	62½	62½	62½			
North Pennsylvania.....	64	64	64			64
1st mortgage 6s.....						
2d mortgage 7s.....						
Genl. mtg. 7s, coup.....						
Genl. mtg. 7s, reg.....						
Northern Central.....		57		57½		
5s.....						
Northern Pacific.....	46	46½	46½	47½		47
Preferred.....	84½	84½	85½	85½		84½
Pennsylvania R. R.....	59½	59½	59½	59½		59½
1st mortgage.....						
Gen'l mort.....						
Gen'l mort reg.....						
Consol. mort. 6s.....						
Consol. mort. reg.....						
Pa. State 5s, new.....						
do 4s, new.....						
do 3½s, 1912.....						
Phila. & Reading.....	26½	26½	26½	26½		26½
1st mortgage 6s.....						
7s of 1893.....						
7s, new convert.....				72		73
Consol. mort. 7s.....			122½	122½		
Consol. mort. reg.....						
Gen'l mort. 6s.....		96	96	96		92½
Def. Income bonds.....						
Philadelphia & Erie.....						
1st mortgage 5s.....				103½		
2d mortgage 7s.....	115½					112½
Pittsb., Cin. & St. L. 7s.....						
Pitts., Tit. & Buff. 7s.....	119½					
Schuylkill Nav'l't'n.....						
Preferred.....	11½					
6s, 1897.....						
6s, 1907.....						
United Co. of N. J.....	186½	188	188½			189
Hestonville, (Horse).....			15			
Chestnut & Walnut.....						

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Jan. 2.

W. 27. Th. 28. F. 29. Sat. 30. M. 1. Tu. 2.

Baltimore & Ohio.....	201	.....	.....	.....	200
6s, 1885.....	.....	.....	.....	.....	.....
Central Ohio (\$50).....	.....	50%	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....
Marietta & Cincin'ti.....	.....	.....	.....	.....	.....
1st mortgage, 7s.....	129%	129%	129%	129%	130%
2d mortgage, 7s.....	101%	101%	101%	101%	100%
3d mortgage, 8s.....	55%	55%	55%	55%	54%
Northern Cen. (\$50).....	.....	.....	57	.....	55%
2d mort. 6s, 1885.....	105%	.....	.....	.....	.....
3d mort. 6s, 1900.....	.....	.....	.....	.....	.....
6s, 1900, gold.....	118	.....	118%	.....	115%
6s, 1904, gold.....	115	115	116	115%	.....
Pitts. & Connellsv. 7s.....	122	.....	122	.....	.....
Virginia 6s Consol.....	62	.....	62%	.....	.....
Consol. coupons.....	62%	62	62	.....	.....
10-40 bonds.....	43%	.....	43%	.....	.....
Def'd Certificates.....	.....	.....	.....	.....	.....
New 3s.....	47%	.....	.....	.....	.....
Western Maryland.....	15%	15%	.....	.....	.....
1st M., end. by Balt.....	.....	.....	.....	.....	.....
2d M., do.....	.....	.....	.....	.....	.....
3d M., do.....	.....	.....	.....	.....	.....
1st M., unendorsed.....	.....	112	.....	.....	.....
2d M., end. Wash Co.....	.....	.....	128	.....	.....
2d M., preferred.....	.....	.....	.....	.....	.....
City Passenger R. R.....	.....	.....	.....	.....	.....

**London Stock Exchange.**

Closing Prices

Dec. 15. Dec. 22.

Baltimore and Ohio 5s, 1927.....	105	109	107	109
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	110	112	110	112
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs.....	90%	91%	89	90
Do. 1st mort. 6s, 1895-'98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds.....	117	117	118	120
Do. Con. M. sp. c., till '83 after 6p. c.....	116	118	117	119
Illinois Central \$100 shares.....	149	150	149	150
Do. S. F. 5s, 1903.....	105	107	104	106
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 91	91	93	91	93
Do. capital stock \$100 shares.....	55	56	55	56
N. Y. Cen. & Hud. R. mort. bonds.....	130	135	133	135%
Do. \$100 shares.....	134%	135%	134%	134%
Do. mort. bonds (stg.).....	122	124	122	124
N. Y. Lake Erie & West. \$100 shs.....	40	40%	40	40%
Do. 6 p. c. pref. \$100 shares.....	87	89	89	91
Do. 1st Con. Mort. bonds (Erie).....	128	132	128	132
Do. do. Funded Coupon bonds.....	125	130	125	130
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. do. Funded Coupon bonds.....	97	99	97	99
N. Y., Pa. & Ohio 1st mort. bonds.....	50	51	50%	51%
Do. Prior Lien bonds (sterling).....	100	105	100	105
Pennsylvania \$50 shares.....	62%	62%	61%	62%
General Mortgage.....	124	126	124	126
Phil. & Erie Gen. mort. 6s, 1920.....	117	119	117	119
Philadelphia & Reading \$50 shs.....	27%	27%	28	28%
General Consol Mortgage.....	114	116	115	117
Do. Improvement Mortgage.....	103	105	104	106
Do. Gen. Mtg. '74, ex-def'd coup.....	96	98	97	99
St. L. Bridge 1st mort. gold bond.....	123	123	121	123
Do. 1st. pref. stock.....	92	96	92	96
S. P'fic of Cal., 1st mort 6s, 1905-6.....	106%	107%	106%	107%
Union Pacific 1st mtg. 6s, 1896-9.....	115	117	115	117
Wabash, St. L. & P. \$100 shares.....	34%	35%	35	36
Do. \$100 pref shares.....	57	58	55%	56%
Do. gen. mort. bonds.....	81	83	81	83

**AMERICAN RAILROAD JOURNAL****Financial and Commercial Review.**

THURSDAY, JANUARY 4, 1883.

MONEY on call on stock collaterals up to noon was 5 per cent, and on Governments 3 per cent. After noon it was 5@4½ per cent. After 2 o'clock the rate was 5 per cent.

The posted rates for foreign exchange were: Sixty-day bills, 4.81; demand, 4.85. The actual rates were: sixty-day bills, 4.80 and 4.80½; demand, 4.84 and 4.84½; cables, 4.85 and 4.85½; Commercial bills were 4.78½ and 4.79. Continental exchange was as follows: Francs, 523½@523½ and 520½; reichsmarks, 94½ and 95½; guilders, 39½ and 40.

The interest-bearing debt of the United States, December 31, 1882, amounted to \$1,392,245,450; debt on which has ceased since maturity, \$14,887,015.26; debt bearing no interest, \$500,815,885.17; interest, \$12,519,342.88—total debt and interest, \$1,920,467,693.31. Of the

debt bearing interest, \$99,326,200 are bonds bearing interest at five per cent, continued at three and one-half per cent; \$250,000,000 at four and one-half per cent; \$738,950,550 at four per cent; \$289,563,950 at three per cent; \$404,750 refunding certificates, four per cent; \$14,000,000 Navy Pension Fund, four per cent. The debt bearing no interest, consists of: Old demand and legal tender notes, \$346,740,311; certificates of indebtedness, \$9,585,000; gold and silver certificates, \$137,468,500; fractional currency, \$7,022,074.17. The cash in the treasury amounts to \$312,924,016.47; and the total debt, less cash in treasury, to \$1,607,543,676.84, against \$1,622,956,899.69 on the first of December, 1882, a decrease during the month of \$15,413,222.85, and a decrease since the 30th of June, 1882, of \$81,370,783.88.

The committee on securities of the New York Stock Exchange has added the following to its lists: \$3,240,000 additional Northern Pacific first mortgage and land grant six per cent gold bonds, due 1921, on 129.58 miles of road built since October 25, 1882, making a total of 1,409.8 miles of road completed; \$540,000 Chicago, Milwaukee and St. Paul—Chicago and Pacific Western division—five per cent gold bonds, issued on twenty-seven miles of additional completed road, at the rate of \$20,000 per mile; Gulf, Colorado and Santa Fé first mortgage seven per cent bonds, due July 1, 1909, issued on thirty-five miles of new lines, at the rate of \$12,000 per mile; \$300,000 Illinois and Southern Iowa 1st mortgage extended six per cent bonds; \$385,000 Milwaukee, Lake Shore and Western 1st mortgage six per cent consolidated bonds; \$4,000,000 mortgage bonds Southern Pacific of California; \$1,176,000 1st mortgage bonds St. Paul, Minneapolis and Manitoba; \$500,000 Tonawanda and Cuba mortgage bonds; \$500,000 stock and \$500,000 1st mortgage bonds Bradford, Eldred and Cuba Railroad; \$450,000 1st mortgage bonds Pacific Extension Minnesota and St. Louis Railroad; \$430,000 five per cent 1st mortgage bonds Burlington, Cedar Rapids and Northern Railroad; and \$300,000 Bankers' and Merchants' Telegraph Company stock.

The following is a comparative statement of the business of the Philadelphia and Reading Railroad Company and the Philadelphia and Reading Coal and Iron Company for the month and year ending November 30, 1882: Total gross receipts of railroad company for November, 1882, \$2,256,748.83; total gross expenses, excluding rentals and interest, \$1,152,184.34—profit for month, \$1,104,564.49; profit for year to date, \$9,859,064.98. The profit for same month, 1881, was \$1,017,265.47; profit for year to date, \$9,141,945.67. The gross receipts of the Coal and Iron Company for November, 1882, was \$1,657,792.31; gross expenses, excluding interest, \$1,354,671.07—profit for month, \$303,121.24; profit for year to date, \$1,200,173.91. The profit for same month, 1881, was \$228,182.38; profit for year to date, \$1,199,445.12.

The gross earnings of the Philadelphia and Erie Railroad for November, 1882, were \$369,582.95, the expenses \$272,232.49, and the net earnings \$97,350.46, being an increase as compared with November, 1881, of \$47,843.56. The net earnings for the eleven months of 1882 were \$1,326,192.20, being an increase as compared

with the corresponding period of 1881 of \$383,775.20.

The directors of the New York, New Haven and Hartford Railroad Company have prepared a report to be submitted to the stockholders at the eleventh annual meeting, to be held in New Haven on the 10th inst., as follows: Income for year ending Sept. 30, 1882, passengers, \$3,393,513.86; freight, \$2,065,855.52; mails, express, etc., \$478,438.26, making a total of \$5,937,807.64. Operating expenses, \$3,803,678.97; taxes, \$260,440.54; interest on Harlem River and Port Chester bonds, \$170,000, making the total expenses \$4,238,119.51—balance, \$1,699,688.13. Two dividends of five per cent have been declared, amounting to \$1,550,000. The sinking fund is \$1,136,286.46. No additions have been made to the capital expenditure accounts during the year. The total number of passengers carried during the year was 6,397,385; tons of freight moved, 1,908,322. The road has 105 engines, 228 passenger cars, 82 mail and baggage cars, and 2,152 freight cars. Substantial improvements have been made in the buildings, bridges, rolling-stock, etc. of the company. The proposed alterations in putting down two additional tracks and a change of curves and grades are recommended, and will necessitate the expenditure of more money for the next year or two than will be available from the earnings of the company. The improvements must be made with money raised upon the credit of the company.

THE Commissioner of Savings Banks of Massachusetts reports an increase of \$10,000,000 in deposits and over \$8,000,000 in loans on personal securities in that State during the year 1882. Real estate mortgages show an increase of over \$3,000,000. The decrease in investments in public funds is over \$3,000,000. The greatest amount of loans are placed at about 5 per cent, the next largest at 6 per cent. The average dividends are 4 per cent, against 3.97 in 1881. Out of 166 banks, 127 pay 4 per cent. Only three banks fail to pay.

A recent statement in regard to Prussia shows that the annual consumption of whisky and brandy in that kingdom alone is something over \$55,000,000, or fully \$2 a year per capita. The total expenditures of the people for distilled and malt liquors and tobacco are about \$270,000,000, nearly \$10 for each man, woman and child in the country. There is a beer shop to every 164 persons, and a tobacco shop to every 125. The amount of intoxicating drinks of all kinds consumed yearly in Prussia is 650,496,762 gallons, or something over thirty gallons a head.

The semi-annual dividends payable in Boston in January amount to \$12,803,018. Of this sum, \$9,276,901 is interest on bonds; \$1,912,843 on railways; \$682,000 on manufacturing stock, and \$931,274 on miscellaneous securities. The total amount is more than two millions and a half greater than was payable in January, 1882. Manufacturing dividends show a material reduction.

The Kansas City, Fort Scott and Gulf Railroad Company has issued a circular to the holders of receipts for blocks of the Kansas City, Springfield and Memphis Railroad Company calling for fifteen per cent additional subscrip-



tions toward the construction of the extension to Memphis. The outlays required since the original plan will make the cost of the road about \$7,000,000. The road will probably be opened by June 30, 1883.

A mortgage for \$2,000,000, with Augustus T. Post of this city, and H. M. North of Columbia, as trustees, was filed at Norristown, Penn., by the Delaware River and Lancaster Railroad Company on the 28th ult. Bonds to the amount of \$200,000 will be issued. This company was incorporated in 1873, to build a railroad from Lancaster, Penn., through Montgomery and Bucks counties, to the Delaware river. The company has lately been reorganized, and a route surveyed which passes through Skippackville. The road, when built, will be eighty miles in length. The mortgage covers all of the real and personal property of the line which is to be constructed.

The First Comptroller of the Treasury holds that the Direct Tax act of 1862 does not make any appropriation under which any of the States can claim the money therein specified, for the reason that the conditions required have not been complied with.

The Greenwich and Johnsonville Railroad Company has declared a semi-annual dividend of four per cent, payable in January, against three per cent in July, 1882. Three years ago the stock of this road was sold as low as eight cents on the dollar. To-day it cannot be bought for 100. The road is free from debt.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atlantic and Pacific 6s, 93½; Boston and New York Air Line pref., 79; Chesapeake and Ohio cur. 6s, 52½; Cedar Falls and Minnesota, 15; Chicago, St. Paul Minn. and Omaha 52½; do. pref., 110½; do. consol., 109; Central Iowa, 28; do. 1st, 111½; Chicago, Burlington and Quincy, Denver div. 4s, 84; Cleveland and Toledo S. F., 106½; Chicago, Milwaukee and St. Paul, Chicago and Pacific West div. 1st, 91½; do. Southern Minn. div. 1st, 105½; Chicago and Northwestern S. F. 5s, 100; Denver and Rio Grande, 42½; do. 1st, 107; do. consol., 88; East Tennessee, Virginia and Georgia, 10; do. pref., 17½; Evansville and Terre Haute 1st consol., 97½; Fort Worth and Denver, 30½; Green Bay, Winona and St. Paul, 6; International and Gt. Northern coupon 6s, 84½; Indiana, Bloomington and Western, 32½; Kansas Pacific 1st consol., 100½; do. 6s, Denver div. ass., 107; Louisville and Nashville genl. mort. 6s, 91; Lake Erie and Western, 30; Long Island, 60; Manhattan Beach, 18½; Missouri Pacific, 101½; do. 3d, 109; Minneapolis and St. Louis 28; do. pref., 61½; Mobile and Ohio, 18; do. do. 2d debent., 46; Missouri, Kansas and Texas, 32½; do. 2d, 55; Metropolitan Elevated 2d, 84½; Memphis and Charleston, 46; Milwaukee, Lake Shore and Western, 17½; Nashville and Decatur 1st, 116½; New York, Chicago and St. Louis, 14½; do. pref., 32; do. 1st, 90; Nashville, Chattanooga and St. Louis, 55½; New York, Ontario and Western, 25½; Norfolk and Western pref., 47½; do. genl. mort., 100; Northern Pacific 1st, 102½; New Orleans Pacific 1st, 86½; Ohio Central, 13; do. inc., 30; Oregon Railway and Nav., 138½; Oregon Transcontinental, 83½; Oregon Short Line 6s, 100; Ohio Southern 1st, 80; Peoria, Decatur and Evansville, 26½; Pennsylvania Co. 4½s, 95; Rochester and Pittsburgh, 21; do. 1st, 103; do. inc., 42½; Rensselaer and Saratoga, 139½; Richmond and Danville, 56; do. 1st, 95; do. debent., 60½; Richmond and Allegheny 1st, 76½; St. Louis, Alton and Terre Haute dividend bonds 60½; St. Louis and San Francisco 2d, class C, 92½; St. Paul and Duluth, 38½; do. pref., 96; St. Paul, Minn. and Man., 140; St. Louis and Iron Mt., Cairo, Arkansas and Texas 1st, 105; do. Arkansas Branch 1st, 107½; do. 5s, 75; St. Paul and Sioux City 1st, 112½; South Pacific of Mo. 1st, 102½; South Carolina 1st, 101½; Texas and Pacific, 38½; do. Rio Grande div. 1st, 83½; Wabash

Gen'l mort. 6s, 79; Arkansas 7s, L. R. & Ft. S., 35½; do. L. R., P. B. & N. O., 73; do. M., O. & R. R., 33½; do. Central, 15½; North Carolina Special Tax 3d class, 7; Tennessee 6s, 41; do. old, 43; do. compromise, 44½; American Cable, 67; Cameron Coal, 18; Sutor Tunnel, 14.

**Boston.**—Atlantic and Pacific inc., 18; do. blocks, 102½; Boston, Clinton, Fitchburg and New Bedford pref., 135; Boston Land, 6½; Boston Water Power, 2½; Boston, Revere Beach and Lynn, 114; Chicago and West Michigan 5s, 89; California Southern, 10; Detroit, Lansing and Northern, 113; Flint and Pere Marquette, 21½; do. pref., 99½; Iowa Falls and Sioux City, 89; Kansas City, Fort Scott and Gulf pref., 120; Kansas City, Topeka and Western 7s, 104½; Little Rock and Ft. Smith, 40; do. 7s, 105½; Mexican Central, 3; do. 7s, 74; do. blocks No. 3, 96; Marquette, Houghton and Ontonagon, 72½; Massachusetts Central 6s, 26; Portsmouth, Gt. Falls and Conway, 20; Sonora 7s, 104½; Toledo, Cincinnati and St. Louis, 5½; Toledo, Delphos and Burlington, Branch inc., 11½; Wisconsin Central, 15½; do. 7s, 1st series, 79½; Allouez Mining Co., 2½; Brunswick Antimony, 14; Franklin, 15½; Napa Quicksilver, 3½; National, 1½; Osceola, 33; Pawabic, 10; Sullivan, 1; Silver Islet, 5½.

**Philadelphia.**—Alleghany Valley 7s, Eastern ext., 118; Central Transp., 35; Northern Pacific pref. scrip., 83; Philadelphia and Reading Coal and Iron debent. 7s, 61; Philadelphia City 6s, 1891, 121; do. 6s, 1895, 129; do. 6s, 1903, 133; do. 4s, 1897, 111; Pennsylvania scrip., 119; Perkiomen 6s, 103; Philadelphia and Reading scrip., 99; Pennsylvania Co. 6s, 107; Pennsylvania Canal 6s, 87; Philadelphia, Wilmington and Baltimore 4s, 93; Susq. Canal, 5; Texas and Pacific consol. mort. 6s, 91½; Union and Titusville 7s, 90½. The latest quotations are: City 6s, 108@120; do. free of tax, 127@132; do. 4s, new, 106@114; Pennsylvania State 5s, new loan, 119½@120½; do. 4s, old, 112@114; do. 4s, new, 116@118; Philadelphia and Reading Railroad, 26½@26½; do. consol. mort. 7s, reg., 123@—; do. gen'l mort. 6s, coupon, 92@93; do. 7s, 1893, 118@120; do. 7s, new conv., 71@72; United New Jersey R. R. and Canal, 188@189; Buffalo, Pittsburg and Western, 18@18½; Pittsburgh, Titusville and Buffalo 7s, 94@95; Camden and Amboy mort. 6s, 1889, 112@113; Pennsylvania R. R., 59½@59½; do. general mort. 6s, coupon, 124@125; do. reg., 124@126; do. consol. mort. 6s, reg., 116@117; Little Schuylkill R. R., 56½@57; Schuylkill Navigation pref., 12@12½; do. 6s, 1882, 88@90; Elmira and Williamsport pref., 58@60; do. 5s, 99@100; Lehigh Coal and Navigation, 38½@38½; do. 6s, 1884, 101@103; do. R. R. loan, 115@116; do. Gold Loan, —@10; do. consol. 7s, reg., 111@117; Northern Pacific, 47½@47½; do. pref., 84½@85½; North Pennsylvania, 63½@64½; do. 6s, 102½@—; do. 7s, 119@—; do. 7s, General mort. reg., 124@—; Philadelphia and Erie, 19@20; do. 7s, 112½@113; do. 5s, 103½@104; Minehill, 62@63; Catawissa, 23@24; do. pref., 54@55; do. new pref., 52½@53½; do. 7s, 1900, 120@—; Lehigh Valley, 63@63½; do. 6s, coupon, 120@121; do. reg., 120@121; do. 7s, reg., 133½@134; do. consol. mort. reg., 119@120; Fifth and Sixth streets (horse), —@190; Second and Third, 114@117; Thirteenth and Fifteenth, 70@75; Spruce and Pine, 44@—; Green and Coates, 80@88; Chestnut and Walnut, —@92; Germantown, 70@73; Union, 110@—; West Philadelphia, 129@—; People's, 9@10; Continental, 100@103.

**Baltimore.**—Baltimore City 6s, 1890, 113½; do. 6s, 1902, 125½; do. 6s, 1886, 106; do. 4s, 1905, 110; Canton Co. 6s, 103; Columbia and Greenville 2d, 93; Maryland Defense 6s, 101½; Norfolk Water 8s, 131; North Carolina consol. 4s, 80; Ohio and Mississippi, Springfield div. 6s, 114½; Virginia Midland 5th mort., 93½. The latest quotations are: Atlanta and Charlotte 1st, 1907, 103½@104; Baltimore and Ohio, 200@213; Baltimore City 6s, 1890, 113½@114; do. 6s, 1900, 123½@125; do. 6s, 1902, 124@126; do. 5s, 1900, 118@119; do. 5s, 1916, 120½@122½; do. 4s, 1920, 108½@109; Central Ohio 6s, 108¼@—; Columbia and Greenville 1st, 1916, 99@—; Canton 6s, gold, 107@110; Marietta and Cincinnati 7s, 1891, —@130; do. 7s, 1896, 99½@99½; do. 8s, 1890, 53½@53½; Northern Central, 54½@54½; do. 6s, 1904, gold, 112½@113½; do. 5s, Series A, 97@100; Ohio and Mississippi, Springfield div. 1st, 114½@115; Richmond and Danville gold 6s, 93@98; Virginia consol., 61@61½; do. 10-40s, 42½@42½; Virginia Midland 5th mort., 93¼@93½; do. inc., 40@49; Western Maryland 1st undorsed, 108@111½.

LARGE type is not necessary in advertising—  
blind folks don't read newspapers.

### Baltimore and Ohio Telegraph Co.

THE Baltimore and Ohio Telegraph Company has opened its line for general business. The system of this company now reaches seven of the leading cities of the United States—New York, Philadelphia, Baltimore, Washington, Chicago, Cincinnati, and St. Louis, including the intermediate points, which are said to give from 60 to 75 per cent of the entire telegraphic business of the country. It consists throughout of a pole line, with capacity for twenty-two wires, seven of which are already strung between Baltimore and New York, with sixteen through Baltimore, and the whole twenty-two up from Fort Hamilton passing through Brooklyn over the great suspension bridge to New York. Valuable connections have already been made as far south as New Orleans, and offices have been opened at Fredericksburg, Richmond, Petersburg and Norfolk. Lines have also been established from New York to prominent points in the New England States, as well as through New York State and western Pennsylvania. From Baltimore north the lines pass through Havre de Grace, Elkton, Newark, Wilmington, Chester, Philadelphia, from thence by an air line to New York, and through New Jersey to Staten Island. Several of the largest railroad combinations of the country are said to be negotiating for telegraphic connections with the Baltimore and Ohio system, independent of those already in working sympathy. By this means this company expects to obtain a complete system of its own. The lines will also reach Louisville, Columbus and intermediate places, and various other new connections are being made with co-operating telegraph and railroad companies. The proposed new Atlantic cable will be constructed by the Baltimore and Ohio Telegraph Company during the coming summer, on a cash basis, with the most approved appliances, all the workmanship to be first-class. Connections are to be made with all the Stock, Produce and Cotton Exchanges of the leading cities.

A decision was rendered in the Milwaukee County Court on the 30th ult. in a suit against the Chicago and Northwestern Railway Company, the object involved being damages for the right of way. The suit was brought against the company as a corporation incorporated under the laws of Illinois. Counsel for the company demurred against this because the company is also incorporated in Wisconsin, and the suit should have been brought under that title. The demurrer was sustained, and the suit dismissed.

THE time for the reorganization of the Vermont Central and Vermont and Canada railroad companies has been extended to Feb. 1.

THE LAKE SHORE AND  
MICHIGAN SOUTHERN RAILWAY CO.,  
TREASURER'S OFFICE,  
GRAND CENTRAL DEPOT,  
NEW YORK, Dec. 22, 1882.

THE BOARD OF DIRECTORS OF THIS COMPANY have this day declared a quarterly dividend of TWO PER CENT upon its capital stock, payable on THURSDAY, the FIRST day of FEBRUARY next, at this office.

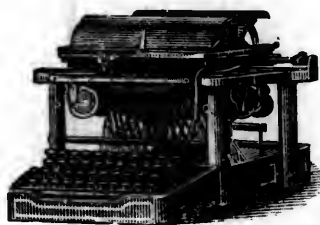
The transfer books will be closed at 3 o'clock p. m. on FRIDAY, the 29th inst., and will be reopened on the morning of Monday the 5th day of February next.  
F. W. VANDERBILT, Acting Treasurer.

**GEO. R. WOOD,**  
IRON AND RAILWAY BUSINESS.  
Steel and Iron Rails,  
ORES.

61 Broadway, - - NEW YORK.

**Shugg Brothers,**  
Designers and Engravers  
—ON—  
**WOOD**  
—AND—  
**PHOTO ENGRAVERS,**  
No. 18 Cortlandt Street,  
NEW YORK.

**REMINGTON**  
STANDARD TYPE WRITER.



Adopted in the offices of the principal Railroad and Supply companies SIMPLE, DURABLE, NEAT.  
Operated at sight, and writes FASTER and BETTER than the most expert PENMAN.

**THOUSANDS of TESTIMONIALS.**

Sold under Absolute Guarantee-order, with the privilege of returning if not suited.

**Wyckoff, Seamans & Benedict,**

281 & 283 Broadway, N. Y. 38 East Madison, Chicago.  
715 Chestnut, Philadelphia. 32 Hawley, Boston.

**FULLER, DANA & FITZ,**  
**METAL**  
**Merchants,**

—IMPORTERS OF—

Tin Plates, Russia Sheet Iron,

Pig Tin, Swedish Iron

and English Steel.

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men's Supplies.

110 NORTH STREET,  
BOSTON.

**NATIONAL EXPOSITION**  
—OF—  
**RAILWAY APPLIANCES,**

TO BE HELD IN

**CHICAGO,** from THURSDAY, the 24th day of May, to SATURDAY, the 23d day of June, 1883, in the INTER-STATE EXPOSITION Buildings, the largest and best adapted for the purpose in the United States.

**COLD, SILVER AND BRONZE**  
**MEDALS**

For Superior Merit.

An abundance of STEAM POWER for running Machinery, and tracks for Locomotives and Cars.

Scientific and Practical Tests by the ablest Scientists and carefully selected Committees.

The Financial Stability of the Exposition secured by a GUARANTEE FUND of

**FIFTY THOUSAND DOLLARS.**

The proceeds, after payment of Expenses, to be devoted to BENEVOLENT PURPOSES connected with the RAILWAY SERVICE.

All material and articles properly coming under the head of RAILWAY APPLIANCES or SUPPLIES admitted.

For FULL INFORMATION address the SECRETARY, care GRAND PACIFIC HOTEL, CHICAGO.

E. H. TALBOTT, Secretary. LUCIUS FAIRCHILD, President.

**COMMISSIONERS:**

Hon. LUCIUS FAIRCHILD, Ex-Governor of Wisconsin and late Minister at Madrid, Spain.  
GEO. M. PULLMAN, President Pullman's Palace Car Co., Chicago.  
AARON FRENCH, Pittsburgh Car-Spring Co., Pittsburgh.  
J. MCGREGOR ADAMS, Adams and Westlake Mfg Co. etc., Chicago.  
E. V. CHERRY, Vice-President Post & Co., Railway Supplies, Cincinnati.  
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**FOR SALE.**

Locomotives—Two Second-hand Narrow-Gauge Engines in good order.

One Second-hand "Tank" Narrow-Gauge Engine, 10 tons. Several Second-hand Standard-Gauge Locomotives in good order, immediate delivery.

One new 3ft. Gauge Passenger Engine, 22 tons, prompt delivery.

Six new 4ft. 8½ Gauge Locomotives, cylinders 17x24, weight 35 tons. November and December delivery.

Two new 3ft. Gauge Locomotives, Cylinders 12x18, weight 20 tons. December and January delivery.

Cars—Passenger and Freight Cars of all descriptions for early delivery.

Rails—16lb., 20lb. 30lb. 35lb. and 56lb. Rails.

Car Wheels and Axles.

Narrow-Gauge Rolling-stock a specialty.

**BARROWS & CO.,**

64 Broadway,  
NEW YORK.

**F. W. DEVOE & CO.**

Manufacturers of Fine

**RAILWAY VARNISHES,**  
**COACH AND CAR COLORS,**

Ground in Oil and Japan,  
ETC., ETC.

Fine Brushes adapted for Railroad use. All kinds of Artists' Materials. Colors for ready use, and all specialties for Railroad and Carriage purposes.

Railroad companies will save themselves great trouble in painting by allowing F. W. DEVOE & Co. to prepare their Passenger and Freight Car Colors. This will insure Durability, Uniformity and Economy. F. W. DEVOE & Co., manufacture from the crude materials, which are the component parts of any shade, and they understand better their chemical relationship, when in combination, than can be possible to those who simply buy their dry materials and then grind them.

SEND FOR SAMPLE CARD OF TINTS.

Cor. of Fulton and William Sts.  
NEW YORK.

**Continuous**  
**Automatic**  
**FREIGHT BRAKES.**

Requiring no other Connection  
between Cars than the ordinary Coupling-Link  
and Pin.

**SIMPLE, DURABLE, AND EFFICIENT.**

Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

**PATENTED MAY 23, 1882.**

Railroad and manufacturing companies, or parties able to co-operate with patentee in their manufacture and introduction, are invited to correspond with

**WM. C. SCHULTZE,**  
Surgeon C., R. I. and P. Ry.  
MARENGO, Iowa Co. Iowa.



## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Fe...100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S...100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Apr. '82 3 1/2
Atlanta and W. Point...100	1,232,200	semi-an	Jan. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	July '82 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3	Long Island.....100	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil. pref.100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	June '81 3 1/2	Louisville & Nashv...100	19,130,913	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt*100	225,000	semi-an	July '81 3	Lowell & Andover...100	500,000	semi-an.	Jan. '82 3 1/2	Wilmington & Weld'n...100	1,456,200	semi-an.	July '82 3
Baltimore and Ohio...100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Oct. '81 2 1/2	Wil., Col., & Aug....100	960,000	semi-an.	Jan. '83 3
" pref.100	5,000,000	semi-an	Jan. '83 3	Manchester & Law... 00	1,000,000	semi-an.	Nov. '82 5	Winchester & Poto'c*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	5,000,000	semi-an	Nov. '82 5	Manhattan.....100	13,000,000	.....	.....	Winchester & Strasb*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	" 1st pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany...100	20,000,000	q'arterly	Dec. '82 2	" 2d pref.100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos. & N.Y. Air Line pf.100	2,795,227	q'arterly	June '82 1	Marietta & Cincinnati 50	1,386,350	.....	.....				
Bos., Cl., F. & N.B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	" 1st pref 50	8,105,600	semi-an.	Sep. '66 38				
Bos., Conc. & Mont. pf*100	800,000	semi-an	Nov. '82 3	" 2d pref 50	4,440,000	semi-an.	Sep. '66 38				
Boston and Lowell...500	3,940,000	semi-an	Jan. '83 2 1/2	Marq. Hout. & Ont. pf.100	2,259,026	.....	Aug. '82 4				
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Massachusetts*.....100	4,022,500	semi-an.	Aug. '82 3				
Boston & Providence...100	4,000,000	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2				
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Michigan Central.....100	18,738,204	.....	Feb. '83 2				
Bos., Revere B. & Lynn...100	419,400	semi-an	Jan. '83 3	Middlesex Central.....100	280,000	semi-an.	Aug. '82 3				
Buffalo, N. Y. & Erie*100	950,000	semi-an	Dec. '82 3	Mill Creek & Minehill* 50	323,000	semi-an.	July '82 5				
Buff. Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	July '82 3 1/2				
Camden & Atlantic... 50	377,400	q'arterly	Nov. '82 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2				
" pref. 50	880,650	q'arterly	Nov. '82 4	Mobile & Montgomery...100	3,022,517	semi-an.	Feb. '80 2 1/2				
Camden & Burl. Co...100	381,925	semi-an	July '82 3	Morris and Essex..... 50	15,000,000	semi-an.	Jan. '83 3 1/2				
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '82 6				
Cape May & Millville* 50	447,000	semi-an	June '81 3	Nashua and Lowell...100	800,000	semi-an.	Nov. '82 4				
Catawissa*..... 50	1,159,500	annual	Oct. '82 2 1/2	Nashua & Rochester...100	1,305,800	semi-an.	Oct. '82 1 1/2				
" pref. 20	2,000,000	semi-an	Nov. '82 3 1/2	Nashv. & Decatur.....100	1,827,000	semi-an.	June '81 3				
" new pref. 50	1,200,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2				
Cayuga and Susq.* 50	589,110	semi-an	July '81 4 1/2	Naugatuck.....100	2,000,000	semi-an.	July '82 5				
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Nov. '82 1 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sept. '82 3				
" pref.100	769,600	semi-an	Aug. '82 3 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Oct. '81 1				
Central of Georgia.....100	7,500,000	semi-an	June '82 4	New London North'n*100	1,500,000	q'arterly	Oct. '82 1 1/2				
Central of New Jersey...100	18,563,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R...100	89,428,330	q'arterly	Jan. '83 2				
Central Ohio..... 50	2,437,950	semi-an	Jan. '83 3	N. Y. and Harlem.....100	7,950,000	q'arterly	Jan. '83 4				
" pref. 50	411,550	semi-an	Jan. '83 3	" pref.100	1,500,000	q'arterly	Jan. '83 4				
Central Pacific.....100	59,275,500	semi-an	Aug. '82 3	" City Line..... 00	.....	annual	Apr. '82 3				
Cheshire preferred... 100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West.100	77,087,600	.....	.....				
Chicago and Alton.....100	11,181,741	semi-an	Sept. '82 4	" pref.100	7,987,500	annual.	Jan. '83 6				
" pref.100	2,245,400	semi-an	Sept. '82 4	N. Y., N. H. & Hart...100	15,500,000	semi-an.	July '82 5				
Chi., Burl. & Quincy...100	69,508,105	q'arterly	Dec. '82 2	N. Y., Prov. & Boston...100	3,000,000	q'arterly	Nov. '82 5				
Chi., Iowa & Nebras*100	3,916,200	semi-an	Jan. '83 4	Niag. Bridge & Canand*100	1,000,000	semi-an.	July '81 3				
Chi., Mil. & St. Paul...100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Sep. '81 3				
" pref.100	14,401,483	semi-an	Oct. '82 3 1/2	" pref.100	1,000,000	semi-an.	Sep. '81 3				
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	N. Eastern (S.C.) pref.100	86,000	semi-an.	May '81 4				
" pref.100	21,525,353	q'arterly	Dec. '82 2	Norfolk & Western pref.100	15,000,000	q'arterly	Dec. '82 1				
Chi., R. I. & Pacific...100	41,960,000	q'arterly	Feb. '83 1 1/2	North Pennsylvania... 50	4,527,150	q'arterly	Nov. '82 1 1/2				
Chi. and West Mich...100	6,151,000	semi-an	Feb. '82 2 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4				
Chi., St. P., M. & O. pref.100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern N. Hampsh...100	3,068,400	semi-an.	Dec. '82 3				
Cin., Ham. & Dayton...100	3,500,000	semi-an	Jan. '83 3	Northern Pacific pref.100	42,312,589	.....	Jan. '83 11 1/2				
C. Ind., St. L. & Chi...100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5				
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Oregon & Transcont'l...100	40,000,000	q'arterly	Jan. '83 1 1/2				
Clev. and Mahoning* 50	3,759,200	semi-an	Nov. '81 3 1/2	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2				
Clev. and Pittsburg* 50	11,244,336	q'arterly	Dec. '82 1 1/2	Oregon R'way & Nav...100	6,000,000	q'arterly	Nov. '82 2				
Columbus & Xenia* 50	1,786,200	q'arterly	Dec. '82 2	Oswego & Syracuse...100	1,320,400	semi-an.	Aug. '81 4 1/2				
Col., Hock. Val. & Tol...100	10,316,500	.....	Jan. '82 2 1/2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2				
Concord..... 50	1,500,000	semi-an	Nov. '82 5	Paterson & Hudson*100	630,000	semi-an.	July '82 4				
Concord and Ports*100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Ramapo...100	248,000	semi-an.	July '82 4				
Conn. & Passump. Riv...100	2,244,400	semi-an	Aug. '82 3	Pemb. & Hightst'n* 50	342,150	semi-an.	Jan. '82 3				
Connecticut River...100	2,100,000	semi-an	Jan. '83 4	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2				
Cumberland Valley... 50	1,292,950	q'arterly	Oct. '82 2 1/2	Pennsylvania Co..... 50	20,000,000	annual	Dec. '82 4				
" 1st pref 50	241,900	semi-an	Oct. '82 4	Peoria & Bureau Val*100	1,200,000	semi-an.	Aug. '82 4				
" 2d pref 50	243,000	semi-an	Oct. '82 4	Philadelphia & Erie* 50	7,013,700	semi-an.	.....				
Danbury & Norwalk... 50	600,000	.....	Oct. '82 2 1/2	" pfd 50	2,400,000	semi-an.	Jan. '75 4				
Dayton and Mich.*... 50	2,402,573	semi-an	Apr. '82 1 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Dec. '82 3				
" pref. 50	1,211,250	q'arterly	July '82 2	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2				
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	" pref. 50	1,551,800	q'arterly	July '76 3 1/2				
Del. & Bound Brook*100	1,652,000	q'arterly	Nov. '82 1 1/2	Phila. and Trenton...100	1,250,100	q'arterly	Jan. '83 2 1/2				
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4				
Denver & Rio Grande...100	29,160,000	q'arterly	Jan. '80 1 1/2	Pittab., Ft. W. & Chi.*100	19,714,285	q'arterly	Oct. '82 1 1/2				
Detroit, Lans. & Nor...100	1,825,600	semi-an	Aug. '80 2 1/2	" Special Imp. 100	6,770,900	q'arterly	Oct. '82 1 1/2				
" pref.100	2,503,380	semi-an	Aug. '82 3 1/2	Pittsfield & N. Adams...100	450,000	semi-an.	Jan. '83 2 1/2				
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Portl., Saco & Portsm*100	1,500,000	semi-an.	Jan. '83 3				
East Pennsylvania*... 50	1,709,550	semi-an	Jan. '83 3	Providence & Worcester...100	2,000,000	semi-an.	Jan. '83 3				
East Mahanoy*..... 50	392,950	semi-an	July '82 3	Rensselaer & Saratog.*100	7,000,000	semi-an.	July '82 4				
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Danv...100	3,866,000	q'arterly	Jan. '81 3				
Eel River..... 50	3,000,000	q'arterly	Dec. '82 1	Richmond & Petersbro...100	1,009,300	semi-an.	Aug. '82 2				
Elmira & Williamspt* 50	500,000	semi-an	Nov. '82 1 1/2	Roch. & Genesee Val*100	555,200	semi-an.	Jan. '82 3				
" pref. 50	500,000	semi-an	July '82 3 1/2	Rome Water & Ogdens...100	5,293,900	.....	Jan. '83 3				
Erie and Pittsburg*... 50	1,998,400	q'arterly	Dec. '82 1 1/2	Rutland preferred... 100	4,000,000	semi-an.	Sept. '82 1				
Evanville & Terre H...100	100,000	semi-an	Jan. '83 6 1/2	St. L., Alt. & T. Haute...100	2,300,000	.....	.....				
Fitchburg.....100	4,500,000	semi-an	Jan. '83 3	" pref.100	2,468,406	.....	Dec. '82 4				
F. & P. Marquette pf.100	6,500,000	semi-an	Jan. '83 3 1/2	St. L. & S. Fran. 1st pref.100	4,500,000	.....	Feb. '83 3 1/2				
Ft. W. & Jackson pref.100	2,000,000	.....	May '82 2	St. L., I. Mt. & South'n...100	21,459,921	semi-an.	Feb. '74 3				
Georgia..... 100	4,200,000	q'arterly	July '82 2 1/2	St. L., Jac'ville & Chic...100	1,293,000	.....	Aug. '82 4 1/2				
Granite..... 100	1,250,000	semi-an	Jan. '83 3	" pref.100	1,034,000	.....	Aug. '82 4 1/2				
Greenwh. & Johnsonv...100	118,000	semi-an	Jan. '83 4	St. P. & Duluth pref.100	4,705,000	semi-an.	Jan. '83 3 1/2				
Han. & St. Jo. pref...100	5,083,024	semi-an	Aug. '82 3 1/2	St. P., Minn. & Man...100	20,000,000	q'arterly	Nov. '82 2				
Harrisbg. & Lancaster 50	1,182,500	semi-an	July '82 3 1/2	Schuylkill Valley*... 50	576,050	semi-an.	Nov. '82 2 1/2				
H'ford & Conn. West'n...100	.....	.....	Nov. '82 1 1/2	Schoonard & Roanoke...100	1,229,600	semi-an.	Nov. '82 5				
Housatonic pref. ....100	1,180,000	q'arterly	Jan. '83 2	Shamokin V. & Pottav 50	669,450	semi-an.	Feb. '82 3				
Illinois Central.....100	39,000,000	semi-an	Sept. '82 3 1/2	Shore Line*.....100	1,000,000	semi-an.	July '82 4				
Ia. Falls & Sioux City*100	4,623,500	q'arterly	Dec. '82 1 1/2	Sioux C. & Pacific pref.100	160,000	semi-an.	Oct. '82 3 1/2				
Iowa R. Land Co.....100	7,620,000	q'arterly	Nov. '82 1	South Br. (N. J.)*.....100	438,300	semi-an.	Jan. '82 3				
Jeffersonv. Mad. & Ind...100	2,000,000	q'arterly	May '82 1 1/2	South Western (Ga.)*100	3,892,300	semi-an.	Dec. '81 3 1/2				
Joliet and Chicago*...100	1,500,000	q'arterly	June '82 1 1/2	Stockbridge & Pitts*...100	448,700	semi-an.	Oct. '81 1 1/2				
Kan. C., Ft. S. & Gulf...100	4,000,000	.....	Feb. '82 2	Syr., Bingham & N.Y.*100	2,500,000	semi-an.	Feb. '81 2				
" pref.100	2,750,000	semi-an	Aug. '82 4	Terre Haute & Ind.....100							

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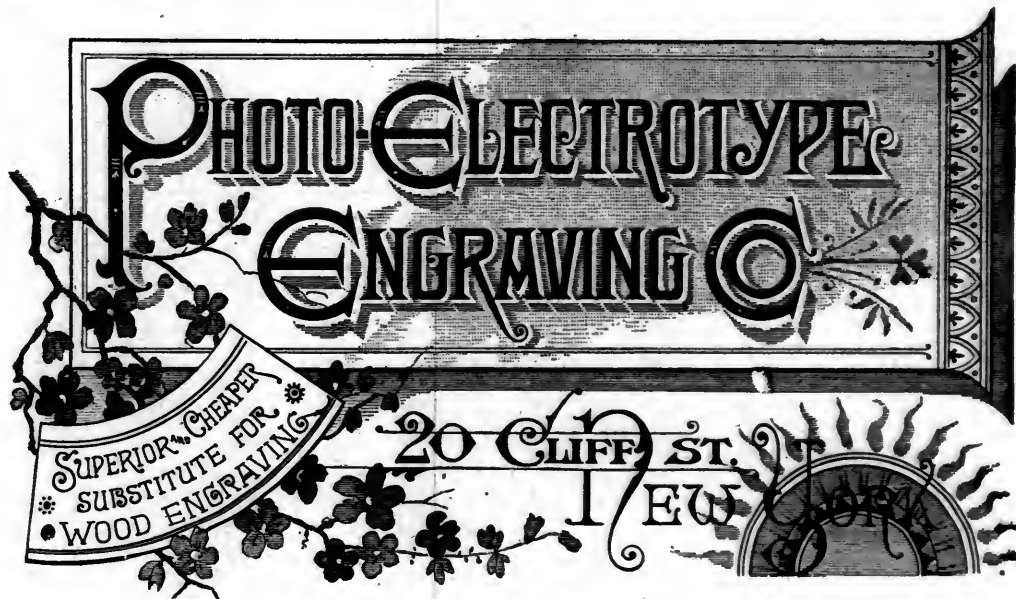


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## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	.....	.....
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,930	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,702,658	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,909,737	2,054,687	2,342,298	2,229,105	2,020,000	2,277,000	2,474,000	2,409,000	2,242,000	.....	.....
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,306	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	767,751	774,790	771,844	672,380	635,307	7,553,988
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	.....	.....
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,474,612	1,240,664	1,478,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,090	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	.....	.....
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,670	1,591,052	1,560,597	1,855,000	17,025,462
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,629	392,921	391,950	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	243,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	221,320	211,014	192,623	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	.....	.....
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	643,417	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
<b>HANNTAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	138,284	154,717	168,798	148,913	154,917	155,030	184,347	258,628	239,196	238,442	249,252	.....	.....
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,860,397
1882.....	728,173	689,387	695,371	674,603	674,749	663,746	752,251	813,600	828,238	865,325	752,144	.....	.....
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	203,677	200,064	199,846	190,125	272,114	247,332	225,678	200,450	156,697	.....
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	247,332	225,678	200,450	156,697	.....
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,705	1,043,912	1,107,985	1,216,215	1,192,390	.....	.....
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,368	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	185,803	136,517	135,549	160,789	210,262	256,924	262,986	258,212	2,403,222
1882.....	150,676	158,590	148,166	141,957	134,378	136,184	136,398	140,443	160,031	265,201	295,110	307,643	.....
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,256
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	.....	.....
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	260,524	299,573	261,200	240,764	237,729	2,809,255
1882.....	213,840	217,261	205,222	263,544	283,244	290,060	300,920	353,726	338,490	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,010	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	.....	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,888	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	509,683	667,488	592,435	550,225	526,685	.....	.....
<b>NORTHERN PACIFIC:</b>													
1880.....	81,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,984	216,210	312,705	424,024	393,260	434,085	534,363	538,555	475,610	434,331	4,044,576
1882.....	239,800	269,000	384,000	438,000	568,332	631,342	679,240	727,377	789,700	834,460	761,324	.....	.....
<b>PHILADELPHIA AND ERIE:</b>													
1880.....	224,307	245,372	327,678	334,947	311,47								

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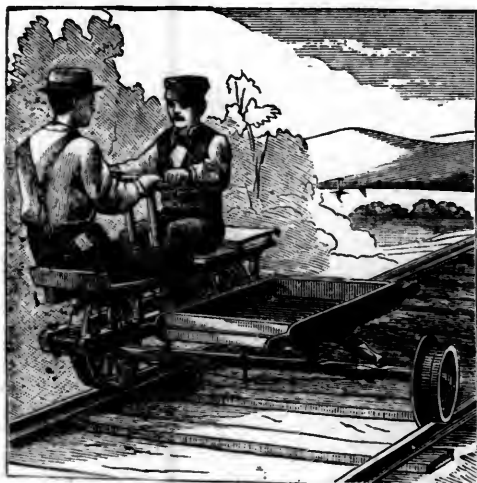
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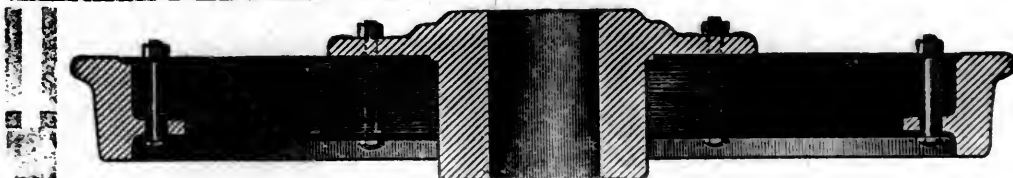
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C. H. ANTES, Sec'y.

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**MCLEOD AIR RAILROAD SIGNAL CO.,**  
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New York Office with Col. Thos. R. Sharp, 115 Broadway.



## Imports of Foreign Dry Goods.

THE Imports of Foreign Dry Goods at New York for the month of December, were :—

ENTERED FOR CONSUMPTION.			
	1880.	1881.	1882.
Manufs. of wool....	\$588,513	\$969,304	\$1,198,815
Manufs. of cotton....	1,582,716	1,657,017	2,041,431
Manufs. of silk.....	1,283,844	1,871,421	2,040,414
Manufs. of flax.....	630,436	764,561	842,467
Miscell. dry goods...	512,262	538,240	573,240

Total ent. for consumption..... \$4,597,771 \$5,800,546 \$6,696,367

WITHDRAWN FROM WAREHOUSE.			
	1880.	1881.	1882.
Manufs. of wool....	\$384,889	\$239,081	\$365,324
Manufs. of cotton....	235,541	245,025	262,542
Manufs. of silk.....	307,813	257,992	255,850
Manufs. of flax.....	280,042	204,056	210,398
Miscell. dry goods..	200,298	110,900	158,581

Total withdr'n from warehouse..... \$1,408,083 \$1,057,054 \$1,252,689  
Add ent. for con.... 4,597,771 5,800,546 6,696,367

Total thrown on the market..... \$6,005,854 \$6,857,600 \$7,949,056

ENTERED FOR WAREHOUSING.			
	1880.	1881.	1882.
Manufs. of wool....	\$305,901	\$341,660	\$552,064
Manufs. of cotton....	530,733	321,061	654,958
Manufs. of silk.....	368,124	384,039	755,522
Manufs. of flax....	291,059	191,046	309,349
Mis. dry goods.....	242,151	175,098	218,711

Total ent. for warehouse..... \$1,737,968 \$1,412,903 \$2,490,604  
Add entered for consumption..... 4,597,771 5,800,546 6,696,367

Total ent. at port.... \$6,335,739 \$7,218,450 \$9,186,971

The total Imports of Foreign Dry Goods at New York for the year ending with December were as follows :

ENTERED FOR CONSUMPTION.			
	1880.	1881.	1882.
Manufs. of wool....	\$28,176,532	\$24,536,605	\$31,182,961
Manufs. of cotton...	26,211,471	25,087,821	28,136,284
Manufs. of silk....	35,342,349	34,617,264	43,382,602
Manufs. of flax....	18,823,968	16,401,384	18,015,705
Mis. dry goods....	11,289,800	10,893,847	11,545,178

Total imports..... \$119,844,120 \$111,537,020 \$132,262,730

Of the above totals there were entered directly for consumption—in 1880, \$90,124,801 ; in 1881, \$89,319,991 ; and in 1882, \$105,143,993 ; and the remainder were entered for warehousing—in 1880, \$29,719,319 ; in 1881, \$22,217,029 ; and in 1882, \$27,118,737. The value of foreign dry good withdrawn from warehouse during the years named were as follows : in 1880, \$24,462,808 ; in 1881, \$25,101,942 ; in 1882, \$23,987,482. The total amount thrown upon the market was, therefore—in 1880, \$114,587,609 ; in 1881, \$114,421,933 ; in 1882, \$129,131,475. The following statement of imports of foreign dry goods at New York from 1849 to 1882, inclusive, will show the fluctuations of this trade :

Year.	Value.	Year.	Value.
1849 .....	\$44,435,571	1866.....	126,222,855
1850.....	60,106,375	1867.....	86,263,643
1851.....	62,846,731	1868.....	80,905,834
1852.....	64,654,144	1869.....	94,725,417
1853.....	93,704,211	1870.....	109,498,523
1854.....	80,842,936	1871.....	132,480,777
1855.....	64,974,062	1872.....	136,831,612
1856.....	93,362,893	1873.....	114,160,465
1857.....	90,534,159	1874.....	106,520,453
1858.....	60,154,509	1875.....	99,816,025
1859.....	113,152,624	1876.....	80,716,163
1860.....	103,927,100	1877.....	77,756,778
1861.....	43,636,689	1878.....	74,863,197
1862.....	56,121,227	1879.....	91,549,600
1863.....	67,274,547	1880.....	119,844,120
1864.....	71,589,752	1881.....	111,537,020
1865.....	91,965,138	1882.....	132,262,730

It will be seen that the growth of imports from 1849 shows a steady increase until 1859, when they were nearly double those of 1858. In 1861 the falling off was \$60,291,411 from the preceding year, after which the increase was gradual until 1866, when the total was larger

than ever before, the effect of which was a decline in 1877 of \$39,959,212, or nearly 30 per cent. Then followed a yearly increase until 1872, when the total reached the enormous figures of \$136,831,612, and had it not been for the panic of 1873, that year would probably have shown a larger amount ; but Europe becoming frightened, orders and shipments were suddenly annulled, and the decrease was regular from that time until 1879, when a decided change occurred, succeeded by a more marked increase in 1880, followed by a decrease in 1881, compared with which, however, the year 1882 shows a large increase.

## Iron Direct from the Ore.

A PROCESS for making iron direct from the ore has been patented in England by Mr. J. C. Bromfield, Hove, Brighton, and described as follows :

The iron ore and fuel coal are reduced to a powder by a machine such as Blake's crusher, after having been calcined in ovens above a tank filled with water, into which the roasted ore passes direct from the ovens. The ore then becomes disintegrated and friable, and cost of reduction afterward very small. The crushed iron ore and coal dust are then mixed, and to them is added carbonate of lime, which is also powdered ready for mixing, as well as alumina or sand. The proportions of each depend on the quality of the material used, and vary according to the nature of the iron in the different districts. The lime, however, will probably vary from one-tenth to one-eighth. The materials are then passed through a mixing machine, and brought into a plastic state by the admixture of mucilage, obtained from steaming seaweed in a close-jacketed boiler, the seaweed being afterward submitted to hydraulic pressure. The mucilage thus obtained has the effect of cementing the pulverized materials, which are discharged at the end of the cylinder into the hopper of a brick or tile making machine. The compressed materials issue from the machine, either as bricks or continuous solid cylinders, into trucks or barrows, and are removed at once to the retort, there to be consolidated into coke by a process of distillation in a furnace.

The retorts are made in two parts ; the lower, which is used as a cold coke chamber, is made of wrought iron ; and the upper, which is conical in shape, is of fire clay, in combination with either carbonate of lime or calcium oxide. The object is to absorb the sulphur given off from the material being coked during the process of gas distillation. The lime, which should be in a caustic state and thoroughly blended with the particles of the fuel, should arrest and combine with any sulphur which may exist in the incorporated materials, while acting still more efficiently and quickly than it ordinarily does in forming a flux with the intermixed silica. Each block or brick of the compound will thus be subjected to cementation in a carbonaceous matrix, which is firmly held together by those ingredients which are intended to flux the whole mass when the melting zone of the furnace is reached. The saving in fuel and the increase in the output of each furnace are due

to the same cause, the greater quickness with which the smelting reactions take place and the much lower temperature required.—*Scientific American*.

THE Michigan Car Company has recently completed a refrigerator car on an entirely new principle for the use of the Great Eastern Freight Line, which runs over the Wabash, St. Louis and Pacific, the Delaware, Lackawanna and Western, the Grand Trunk, and the Chicago and Grand Trunk with its Western connections. The car is built in a substantial manner, and placed on the most improved kind of trucks, and is arranged to be used for both winter and summer shipments of farm produce liable to injury by cold or heat. The car is built with an outer shell surrounding a second and inner compartment. Both these shells are built perfectly air-tight, forming a vacuum or dead-air space. The inner shell has a matched lining, which gives the interior of the car a finished appearance, and acts as a protection to the air-chambers. For summer use there are two openings in the roof, where ice may be placed in apartments provided for the purpose. It is said cars built in this manner are much better for all seasons of the year than the old style, and give entire satisfaction.

LETTERS Patent have been obtained by a resident of Wilkesbarre, Penn., on what promises to be a valuable improvement on coal screens. The wire heretofore used in making screens required to be of soft iron, in order to enable it undergo the process of crimping and locking about the frames of the segments which form the revolving screens, and, being soft, it soon became worn and useless by the friction of so great a quantity of coal passing through the screens. This improvement consists in a process for the conversion of these screens into steel after the segments are complete and ready for the frames. Practical coal men says there is no doubt that this hardening of the screens into steel will effect a great saving in the process of preparing coal for the market, and that steel screens in the future will bear the same relation to the old soft iron ones that steel rails do to the old iron ones of former times.

In some places in Europe steel bars are used in preference to bells, supplanting them sometimes altogether in church steeples, and producing very pure, distinct, and melodious sounds. An English writer even advocates their general use, on the ground that, while in point of sonorousness they are equal to the common bell, in certain other respects they are to be preferred to it. Their weight will be light in comparison with the ponderous objects they are to replace; they will not burden the steeple so much, and, consequently, will give more scope for architectural design ; their winding and hanging up will not be so difficult, dangerous, and expensive; they are not liable to crack, as is the case with bells, and are, therefore, adapted for use in any climate; they can also be operated by a simple mechanical contrivance. They are also much cheaper than bells.

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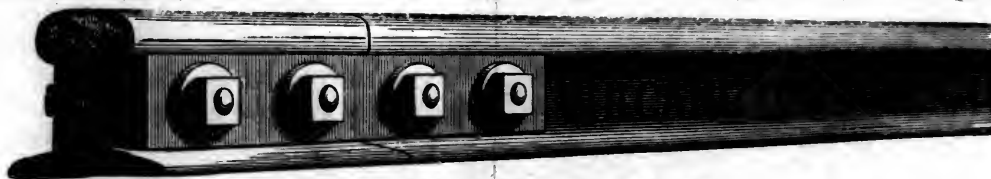
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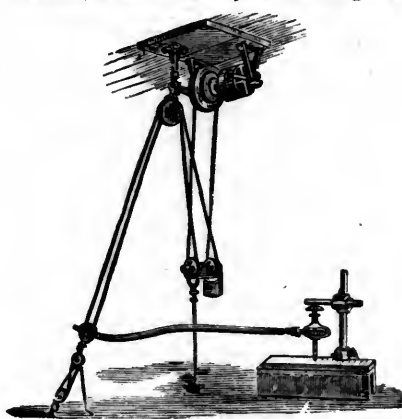
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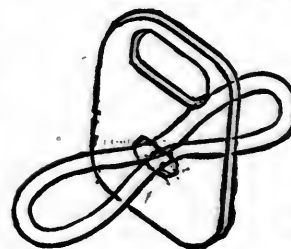
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### Railroads of Michigan.

THE annual report of the Commissioners of Railroads of Michigan shows that there are 57 corporations within that State, with 11,465 miles of track, for 1881, an increase of 5,655 miles over 1880. This increase is owing to a great extent of new track that is now reported for the first time. The amount of paid in capital stock, as reported for 1881, is \$239,505,422, an increase of \$78,925,102. The debt of the railroad corporations was largely increased during 1881, while during 1880 it was considerably decreased. The last report showed an aggregate indebtedness of \$153,372,308, which, compared with the report of 1881, is an increase of \$115,128,296, the total amount of the debt for 1881 being \$268,500,604. The average per mile is \$23,408, a decrease from last year of \$2,739. The liabilities are enlarged by the increased mileage \$115,128,205. The total stock and debt which will be carried over from the present report is \$507,710,593, an increase of \$193,757,964 for the year. Of this amount the sum chargeable to Michigan would be \$188,257,300. The total cost of properties included in this report is \$487,560,525, an average of \$42,520 per mile. This is an increase upon the last report of \$190,171,698, but a decrease per mile of \$8,629. The cost of new road for the year is reported as \$3,586,356 less than the increase of stock and debt, thus adding that amount to the railroad capital representing no value in railroad property. The reported cost of construction far exceeds the actual cost in many cases. The yearly statement shows \$75,195,845 earnings, an excess over the previous year of \$18,545,791; the operating expenses, interest and rentals, \$67,409,045, an increase of \$23,888,753. The railroads reported to their shareholders gross receipts, \$76,148,538, and a balance of \$25,867,532 to the credit of income. There is to be charged off from this balance \$13,825,472 interest on funded debt, \$310,675 interest on floating debt, and \$3,001,321 rentals, a total of \$17,137,469. To the account of net income \$8,730,063 is credited. Dividends amounting to \$9,055,250 were paid and charged against this balance, leaving a deficiency in the business of the year, after payment of expenses, interest, rentals and dividends, of \$325,187. From this amount is deducted the balance of \$1,607,497 brought over from 1880, leaving to the credit account a balance of \$5,282,309. The cost of maintenance of way is reported at \$12,882,459 for the year.

### Arkansas State Bonds.

IN 1868 the Arkansas Legislature passed an act lending the State credit to railroad companies to the extent of \$10,000,000. Bonds to various railroads were issued for nearly \$6,000,000. Subsequently the State Supreme Court decided that the act had not been legally passed. Several months ago a holder of bonds issued by the Little Rock and Fort Smith Railroad, filed a bill in the United States Circuit Court at Little Rock to compel that company to pay the State bonds, and to foreclose the State lien on the railroad. The railroad company filed a demurrer. The Circuit Court, in

an opinion written by Judge Caldwell, of the United States District Court, and concurred in by Judge McCrary, of the United States Circuit Court, has overruled the demurrer, holding that the lien in favor of the State to secure the payment of the State bonds loaned to the original company is paramount to the lien created by the subsequent mortgage, under which the defendant claims, and that the holders of the State bonds are entitled to be subrogated to the lien of the State to secure their payment. The Court further holds that the decision of the Supreme Court of the State, that State bonds are not binding obligations of the State, in nowise affects the rights of bondholders against the company, or the validity of the statutory lien to secure their payment. The bonds affected by this decision represent nearly one-half of the disputed debt of the State. The amount of bonds originally issued in aid of the railroads was \$5,350,000, but the amount of those outstanding is not over \$2,000,000. The others have been bought up by the railroad companies in anticipation, it is said, of the result now reached.

### New York Canals.

THE revenues and expenditures of the canals for the year ending September 30, 1882, were as follows:

Tolls.....	\$647,622 88
Rent of surplus water.....	1,910 85
Miscellaneous sources.....	10,456 62
	\$659,990 35

#### For ordinary repairs:

Superintendent of Public Works.....	\$143,276 81
Engineers.....	30,000 00
Section superintendents.....	361,206 04
To collectors of canal tolls for salaries, clerk hire, pay of inspectors and office expenses.	35,337 23
Weighmasters and assistants, for salaries and office expenses.....	2,889 83
Salaries chargeable to the annual revenues, refunding tolls, printing and miscellaneous expenses.....	80,100 10
	\$653,510 01

Surplus revenue..... \$6,460 34

For the year ending September 30, 1881, the revenue failed to meet the expenditures by the sum of \$205,642 45.

The following is a statement of freight carried and tolls collected from the opening of navigation to December 1, in the years 1881 and 1882:

	Tons moved.	Tons collected.
1882.....	5,421,720	\$655,195 51
1881.....	5,143,877	631,621 11

Gain in 1882..... 277,843 \$23,574 45

To provide for the deficiency in the Sinking Fund under article 7, section 3 of the Constitution, it will be necessary to raise by tax the sum of \$1,038,198 34, which will be equal to about 38-100 of a mill on the present valuation. The Superintendent of Public Works estimates that the tolls received since September 30, 1882, with an unexpended appropriation in the Canal Fund, amounting together to about \$588,000, will be ample to make the necessary repairs and operate the canals until the close of the present fiscal year.

The adoption of the amendment to the Constitution abolishing tolls on the canals, renders it necessary for the present Legislature to provide by tax for their maintenance and repair for the year ending September 30, 1884. The

amount required for these repairs the Superintendent estimates at \$500,000.

### Mineral Oils Condemned.

"MINERAL oils used for lighting and heating," it has long been recognized, are fraught with danger to life and property; but, although a warning has gone forth against them, we have no doubt they will still be employed. The jury which inquired into the recent fire into Hampton Court Palace were of opinion that it was caused by "the upsetting of a mineral oil heating lamp," and they wound up their verdict by virtually recommending "that regulations should be made to prevent the storage or use of mineral oils within the palace." At the same time Mr. Mitford, in giving evidence, "would not suggest the introduction of gas," hitherto excluded from the edifice, so that there seems nothing left to choose except candles and vegetable oils. The latter are safe, but supposed to be disagreeable to the sense of smell, and candles, it is affirmed, are full of perils. The special hazard, however, pertaining to mineral oil is that if the vessel inclosing it is upset or broken the flame is rapidly extended and with great difficulty extinguished. Thus while caution is necessary in dealing with all lights, more than ordinary care is needed where paraffin, benzoline, or any other like oils are used. What the Hampton Court calamity illustrates is not only the ever-present danger, but the liability to "accidents" in handling the lamps. The fatal warning should not pass by unheeded by the tens of thousands who habitually work, or read, or, as it appears, heat their rooms with these highly inflammable substances. More than emphatic warning cannot be applied; yet precautions may be taken to lessen the evil. Mr. Mitford, writing to us from the Office of Works—and he speaks with knowledge and authority—says that those who use these dangerous oils should have on every landing a scuttle or bucket of sand, which, if "thrown on burning oil, disintegrates it and puts out the flames," whereas water in small quantities tends only to spread them. We fear, however, that the immense number of persons, especially among the poor, who use mineral oils will not be able to act on his wise council.—*London Daily Telegraph*.

### Headache.

DR. HALEY says (*Australian Medical Journal*, of August 15, 1881) that, as a rule, a dull, heavy headache, situated over the brows and accompanied by languor, chilliness, and a feeling of general discomfort, with distaste for food, which sometimes approaches to nausea, can be completely removed in about ten minutes by a two-grain dose of iodide of potassium dissolved in half a wineglassful of water, this being sipped so that the whole quantity may be consumed in about ten minutes.—*Glasgow Med. Journal*.

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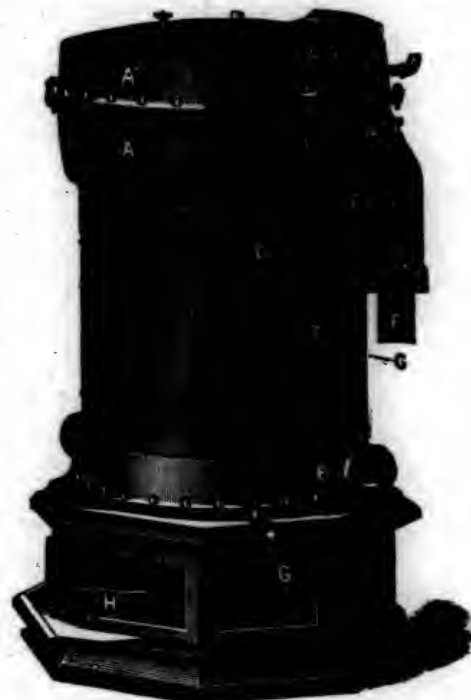
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### Print the Pension Lists.

MEN who were in the army tell us that a good many pensioners were not soldiers; that hundreds and thousands are drawing pensions who never were in the army in any capacity. They are put on by members of Congress, who combine to vote their favorites public money under false pretenses.

It is high time the country was aroused on the subject of pension frauds. The tried and true soldiers should be foremost in the exposure of the enormous swindles that are draining the Treasury and disturbing, there is reason to fear, the veneration of the country for the heroes of the war.

What objection is there to the publication of the pension lists? So far as they are of the deserving they are rolls of honor, and nothing would be so effective to point out the undeserving as the daylight glare of publicity.

There are nearly 300,000 pensioners drawing money from the public Treasury, with an enormous and increasing number of applications, including a great number on the rejected files "subject to re-examination;" and now we hear of projects to pension everybody who was in the remotest way engaged in the late war with England (seventy years ago) and all who were in the Mexican war. Then there is an organized effort to have \$40 a month paid to each soldier who lost a limb or suffered injury "equivalent" to that, and there are pension agents who could make out on the papers a bad cold caught by a teamster equivalent to the loss of a leg by a soldier. Here is what the Commissioner of Pensions tells us in his late report, which has not been so extensively read and carefully studied as it should be. He says:—

"There are now on file 253,648 pending and rejected late war claims, which were filed prior to July 1, 1880, and, allowing twenty per cent for the rejection, there would be 202,919 for admission and entitled to the benefits of the Arrears act. If these should be placed on the pension roll simultaneously, he calculates that the amount of arrears on the present value of each case allowed would be in the aggregate, in round numbers, \$204,795,000. On the same proposition it would increase the present roll of pensioners from 291,636 to 494,575, and the annual value would be, in round numbers, \$50,000,000.

Heretofore it has been our boast that when the rebellion was over our Army disbanded and returned to the ways of peace and the paths of industry, and our first point when we compare ourselves with the other nations of the earth is that we do not burden ourselves with a standing army. But no other nation ever had such a standing army of pensioners.—*Cincinnati Commercial*.

THE East Tennessee Valley Zinc Company, organized a short time ago with a capital of \$300,000, let contracts on the 30th ult. for the erection of the furnaces and buildings in Knoxville. They have several thousand tons of zinc ore already dug a few miles from that place. The furnaces will be in operation by next Spring.

### Railroads of South Carolina.

THE total number of miles of railroad in South Carolina (including 78 miles constructed during the past year), is 1,504. The total debt of the railroads is \$27,215,900 and the cost of the roads and equipment, as reported, \$35,110,793. There is an increase in the number of passengers and tons of freight carried, the number of passengers being 961,313 in 1882, against 764,195 in 1881. The number of tons of freight carried was 1,323,364 in 1882, against 1,139,481 in 1881. The total income of the roads was \$5,885,738, and the expenses as reported were \$4,690,086, the proportion of the expenses to the income being 79 per cent. The decrease in the net income, as compared with the income of 1881, is \$348,646, or 22 per cent. The taxes paid by the various roads amount to \$174,041, of which amount \$159,828 is for South Carolina.

### Fort Worth and Denver City Railway.

THE following is a synopsis of the first annual report of the Fort Worth and Denver City Railway Company, which was submitted at the annual meeting of the stockholders on the 12th ult. The construction of the road was commenced November 27, 1881. The first rail was laid February 27, 1882, and successive sections were turned over to the company by the contractors as the same were completed, and immediately operated by the company as follows: May 1, 1882, thirty-five miles; July 1, 1882, twenty-eight miles; July 24, 1882, twenty-eight miles; and September 15, 1882, nineteen miles completing the line for a distance of 110 miles, extending from Denver Junction (three miles from Fort Worth on the Missouri Pacific line) to Wichita Falls. The road is well and substantially constructed, and the condition of the track and roadway will favorably compare with that of the best railways in the southwest. The country adjacent to the line is being rapidly settled up, and the new towns show a rapid and healthy growth. The local traffic has been steadily increasing, new business being developed almost daily at all points on the line. The coal fields adjacent to the road are now being opened, and promise to create a large traffic for the company. The coal is of excellent quality. The stock of the company outstanding amounts to 22,000 shares, and its bonded indebtedness to \$2,200,000—or at the rate of \$20,000 per mile. The earnings of the company from May 1 to November 1, 1882, amounted to \$129,123.78, of which \$84,964.72 were derived from freight carried, and \$25,851.55 from passengers. During the same period the operating expenses were \$49,283.86, and the net earnings \$79,639.92. The average of miles operated during the six months May 1 to November 1, was eighty-two miles. The gross earnings per mile operated were \$1,565.13; operating expenses, \$597.38—net earnings, \$967.75. Interest on bonded debt per mile for six months, \$600. During the six months the company moved 3,670 bales of cotton and a total of 2,765 car-loads of cattle, lumber and merchandise (no construction material is included in these figures), of which lumber con-

stituted 1,081 car-loads and cattle 1,081 car-loads. The greatest increase in the traffic of the company began immediately on the completion of construction. Tons freight transported, 36,220; number of passengers carried, 25,311. The equipment consists of eight locomotives, six passenger coaches, four baggage, 200 flat and 200 box cars.

### Wouldn't Show his Ticket.

EVERYBODY who will stop to think must admit that the gates at the railroad depots are a wise provision. One must show his ticket before he can pass to the train, and it is not once in a thousand times that a passenger can go astray. And yet it galls and annoys lots of people to be railed off and penned up, and be obliged to exhibit a ticket.

Yesterday morning a very stern and dignified man with a gripsack in his hand tried to walk through the gates at the Central depot, and when asked for his ticket he haughtily replied: "It is in my pocket."

"Let me see it."

"I will not! My word should be proof that I have it!"

"Have to show your ticket, sir."

"I won't submit to any such indignity!" exclaimed the stern man, and he didn't. He entered the freight sheds, passed through a flour car, climbed over a lot of hides and crept under a baggage car, and finally reached the train he was after. A brakeman stood at the steps and asked;

"Going West, sir?"

"No; going East."

"Then your train won't go for three hours and a half yet! This train goes West?"

And the worst of it all was the man at the gate and a dozen others caught on and raised such a laugh that the stern man went down into the freight house and hid behind a box car.—*Detroit Free Press*.

### The Philadelphia Cable Motor.

THE last sections of the castings necessary to complete the street work for the Union Line Cable Motor on Columbia Avenue, Philadelphia, are now being put in at Twenty-third street. When these are completed, and a few other details connected with the work done, which the superintendent in charge thinks will occupy another week, a trial trip will be made. The cars—ten in all—for the road have been built and are ready for use. They do not differ from an ordinary street car in size and appearance, except that the front platform is semi-circular in form and inclosed. There is some rather intricate looking machinery under the car, which is hidden by iron slat work outside the wheels. The person in charge of the moving of the car stands on the front platform and operates it by two brakes, one a wheel and the other a handle brake. One or more ordinary cars can be attached to the motor car.

THE largest theatre is the New Opera House in Paris. It covers nearly three acres of ground. Its cubic mass is 4,287,000 feet. It cost about 100,000,000 francs.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

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Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,	A. V. H. CARPENTER,
General Manager.	Gen. Pass. and Tick. Agt.
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**They will not Blow out or Freeze out.**

There is but one opening in the top for the smoke to escape, and that opening is always kept on the opposite side from the wind by the top resting on a point, and is turned with the wind by the weather vane attached to the top.

It also takes air through the same opening through an outer chimney, a double top of the frame and tubes running down to the lamp.

The air can also be taken from the inside of the building through the gas pipe holder, which is another way to head off the storms.

**BAUGHMAN & MARKLEY,**  
Albion, Ind.

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See above picture, and name of the 24 parts in Webster, page 203,—showing the value of **Defining by Illustrations.**

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[Mention this paper.]

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## He Got a Seat.

How a Tired Passenger and Perseverance Were Rewarded in a Third Avenue Horse Car.

It was a Third avenue horse car, and it was very crowded. A good natured son of Erin had boarded the car near the City Hall, but was too late to get a seat. He carried a tin dinner pail and wore the dress of a hardworking man. There was a humorous twinkle in his eye, but it was plain to be seen that he was tired. He hung on to a strap near the door in a commanding position, where he would be sure to see the first vacant seat. Not a single passenger got out until Houston street was reached. Then there was a momentary glimpse of a vacant seat, but it was filled before he could reach it. At Fourteenth street the car stopped. The man's eye brightened and he kept a sharp look out. But no—it was to let a lady get on. The car dragged its way slowly on to Twenty-seventh street, and slowed up.

"Twenty-sivinth sthreet!" called Pat, with his eye on a woman who looked as if she wanted to get out. But she didn't, and the car went on.

"Thurty-fort' sthreet!" called Pat, when that thoroughfare was reached. "Oh, begob; what a foine sthreet!" Everybody smiled, but nobody stirred.

"Thurty-eight sthreet! Wud yez luk at the foine houses?" said Pat. And yet nobody stirred.

From that time on Pat called the number of nearly every street in a very distinct and insinuating way, with flattering comments on them as desirable places of residence, but his efforts continued to be vain. A few unfortunates who had been obliged to stand, like himself, from time to time, left the car, but not a vacant seat was to be seen.

Finally, poor Pat became discouraged and subsided for awhile. But at Sixty-third street he broke out in one last appeal.

"Sixty-thurd sthreet!" He looked around the car, saw that his announcement had no effect, and then exclaimed, in serio-comic despair, "For the love of God, have none of yez homes?"

This had its effect. Amid the general laugh a man got up and insisted upon the tired Irish man taking his seat.

DYNAMOGEN is the name of a new explosive invented by M. Petrie, a Vienna engineer, which he claims is a dangerous rival to gunpowder. According to his description, it contains neither sulphuric acid, nitric acid nor nitro-glycerine, and cannot injure in any way either gun or cartridge. The charge of dynamogen is in the form of solid cylinder, which can be increased in quantity, without being increased in size, by compression. The rebound of the guns with which the new explosive has been tried is said to have been very slight. It is also said that the manufacture of dynamogen is simple and without danger, that it preserves its qualities in the coldest or hottest weather, and that it can be made at forty per cent less cost than gunpowder.

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## Quicksilver in California.

From a statement filed before the Committee of Ways and Means of the House of Representatives at Washington by Gen. Rosecrans, of California, it appears that during thirty-three years the California quicksilver mines have produced 1,310,095 flasks of quicksilver, or 100,222,267 pounds. There was during the same period 881,017 flasks, or 67,397,800 pounds exported, or two-thirds of the product, which was valued at \$47,582,843. California produces one-half of the quicksilver in use throughout the world, the most of it being mined by small capitalists. These come in competition with the Rothchilds, who control the quicksilver mines of Austria and Spain. According to Gen. Rosecrans's statement, the Rothchilds got control of the greater part mined in 1873 and ran the price up to \$1.20 per pound. In 1875 they did the same, running the price up to \$1.55 per pound. The Rothchilds now have control of 100,000 flasks and have run the price down to thirty-nine cents per pound. The quicksilver is used in mining, in the arts and for making looking-glasses.



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THAT department of the AMERICAN RAILROAD JOURNAL which contains descriptions of new inventions properly coming within its range of subjects, is regarded with great notice and favor, particularly by those directly interested in learning what the latest applications of mechanical ingenuity in railroading are, and by those who have produced inventions which they desire to make as widely known as possible.

The large and widespread circulation of this paper, its prestige as the oldest railroad journal in the world, and the weight attached to its contents by the general consent of leading railroad men in all countries, give such value to its carefully prepared descriptions of new machinery and appliances as cannot be found outside of its columns.

The interest manifested by inventors in supplying us with information of their doings, and the eagerness with which this is received, encourage us to give an increased attention to that department of this paper treating of new inventions.

*We therefore repeat our invitation to all persons who have produced what they regard as improvements coming within the range of railroad operations, to communicate with us promptly regarding the same.*

All matter sent us will be thoroughly examined and considered, and no inventions in our opinion likely to be practicable and useful will be passed over without receiving due attention from us.

### Madame Nilsson's Kindness.

THE railroad conductors and employes who were on the train that bore Madame Nilsson away from the Pacific Coast are enthusiastic in their praises of that great singer and excellent lady. Independent of her sweet singing, they were charmed with her gentle manners, generosity and kind consideration shown to every one and to the public. Realizing the fact that the people of the interior could not hear her except in this way, she freely sung wherever people assembled. She did it, too, without condescension, and her face showed her happiness in being able to please them. She bowed with as much grace at the applause and seemed as much delighted as if singing to a fashionable audience in a crowded theatre. While crossing the stairs on the ferry the passengers gathered about the car and she sung to them. She treated Sacramento in the same way. Rocklin was similarly favored, and the residents of Reno heard the famous lady. The employes of the road were welcomed to her car and she sang willingly. She expressed herself as delighted with California and its climate and the enthusiastic reception she met with, hoping some day to be able to return and view the wonders of which she had heard so much. All who saw her seemed to have fallen in love with the lady.—*Sacramento Bee.*

### How Widow Starkey Made \$2,950.

Nor long since Wakefield Starkey, of Austin, while crossing the track of the International and Great Northern Railroad on a valuable mule, was struck by a locomotive and killed. The mule was also hurled into eternity. Wakefield Starkey, although a perfect gentleman on the street, was a perfect tyrant of the deepest dye. Without any provocation whatever he used to beat his wife and lock her up in the wardrobe; hence, when she heard of his death it was not so much a case of a heavy breave-

ment as it was of mitigated affection. As the engineer of the locomotive was clearly to blame for the accident it was suggested to the widow that she bring suit for damages. She resolved to do so, and called at the office of the railway. The proper official happened to be in. The widow had such a clear case against the company that it was deemed advisable to compromise the matter. "Now, madam," said the official, after the widow had thrown back her veil and stated her business, "we are willing to do what is fair in this matter. There is really no occasion to go to law. It is a delicate subject to discuss, so, I think, without going into the merits of it, I will tender you a check for \$3,000, and you will sign a paper releasing the company from all further demands." The widow started, and asked: "How much?" I am authorized to pay you \$3,000." "I accept it," she said, very much agitated. The check was handed over, the papers signed, and the widow walked out into the street in a bewildered frame of mind. As she cashed the check she said to herself confidentially: "I didn't expect to get more than \$50. I reckon that railroad fellow didn't know how old that mule was."—*Texas Siftings.*

THE Pennsylvania Steel Company, the plant of which is at Steelton, near Harrisburg, is completing a school building at a cost of \$65,000, which will be presented to that borough. The company is also erecting a merchant plate mill at a cost of \$300,000, a blacksmith shop to cost \$65,000, two new furnaces to cost \$400,000, and has just completed one hundred and twenty dwellings at a cost of \$60,000. The company pays 6 per cent. in dividends semi-annually, employs 2,500 hands, and has a monthly pay-roll approximating \$130,000. Its freight bills this year will be \$800,000, and of this the Pennsylvania Railroad Company will receive \$600,000. One steel rail thirty feet long is made in these works every passing minute of the day and night. One hundred cars arrive and depart from the yards of the company every twenty-four hours, and there is never a smaller amount than \$1,000,000 worth of raw material on hand at any time. The total plant is valued at over \$4,000,000, and the profits for this year will reach \$1,500,000. In 1873 the stock of the company sold for \$48, the par being \$100, and the price of it to-day is \$305. There has never been a strike at the works of the Pennsylvania Steel Company.

AN automatic electric mechanism, that is designed to announce the approach of railroad trains, has been tried on what is called the Paris-Lyon-Mediterranée line. It consists of a box filled with mercury placed under the rail at a required distance from a bell. When a train passes over this box the mercury is so agitated as to form contact with the wire communicating with the bell and thus makes it ring.

In Great Britain and Ireland there are now 26 street railways belonging to the local authorities, the total length of which is more than 150 miles and the cost a little over \$9,000,000. The 413 miles of road belonging to private individuals cost considerably over \$30,000,000.

### The Man Who Never Advertises.

SING, business muse, the dark and doleful fate  
Of him who labors but that he may wait;  
The piles of goods heaped up within his store,  
Which can't be less, and never may be more;  
The man whose life has lost all fortune's prizes,  
In fact, the man who never advertises.

Sing of his start, his great ambition's scope,  
The capital that gave him cause to hope,  
His credit large, his full and ample stock,  
His bank account as solid as a rock;  
Then tell the doom to which the man was fated  
Who never advertised, but simply waited.

So simply, and so vainly! Splendid signs,  
Which basement art irradiates and refines,  
Plate glass show windows elegantly dressed,  
Such lovely clerks, cashiers, and all the rest,  
Served but to show him how the public sizes  
The style of him who never advertises.

He waited, and all waited; clerks, cashiers,  
Salesmen, sales omen, such delightful dears,  
Impatient waited all the season through,  
With precious little for the crowd to do.  
The public saw—that fact there's no denying—  
But passed the store without a thought of buying.

Business was dull, but salaries and rent  
Went on till cash and credit both were spent;  
The silly merchant hoped his luck would turn,  
Until the Sheriff closed the whole concern.  
Now, at a pittance which his soul despises,  
He works for one who always advertises.

### An Unfortunate Wink.

A WELL-KNOWN real estate and insurance agent in Bridgeport was a victim of the wink syrup accident, at one of the drug stores in that city recently. He is intensely total abstinence, which gives emphasis to the grief on this occasion. A peculiarity of the man is a tendency to wink when speaking. He visited the drug store with his wife for a glass of soda. The clerk asked the name of the syrup preferred, and was told strawberry. The same query was put to Mr.—, who winked and said he would take the same. She received her strawberry straight, but he got his generously crossed with bourbon, a flavor he did not discern until he had got down half the contents of his glass. On investigation it appeared the clerk had mistaken the character of the wink. Since then Mr. — goes all around his soda glass with a lantern before touching his lips to it.—*Danbury News.*

ASBESTOS is at present in Italy mainly supplied from the Provinces of Sondrio and Turin. It occurs in regular strata varying from 3 to 4 inches, although in some cases it has been struck 20 inches thick. The inclosing rocks are chloritic and telcose schists of a greenish color, and the asbestos is found chiefly in fibrous masses of a yellowish-white color. Occasionally the fibres are long and firm like a skein of thread of a yard or more in length. It has also been noted that asbestos abounds in the serpentine rocks, and it is often accompanied by other minerals, among which garnites of a green color in minute crystals are discovered.

A RAILROAD train going at the rate of sixty miles an hour moves through eighty-eight feet in a second. A rapid penman, armed with one of Esterbrook's quill-like Steel Pens, and writing thirty words a minute, would get over the ground in about five minutes.

# AMERICAN Railroad Journal.

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SECOND QUARTO SERIES.—VOL. XXXIX., No. 2.]

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[WHOLE No. 2,437.—VOL. LVI.]

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matter which the readers of such a paper as this are gratified to find within its columns.

## ORGANIZATION.

THE directors of the Delaware Western Railroad Company, elected on the 8th inst., are: Robert Garrett, Samuel Spencer and Osmun Latrobe of Baltimore, Perry Belmont of New York, and Victor DuPont and William M. Canby of Wilmington.

THE following gentlemen were elected directors of the New York City and Northern Railway Company on the 8th inst.: B. M. Gallaway, L. May, J. F. de Navarro, J. P. Kennedy, C. F. Woerishoffer, L. C. Livingston, G. J. Forrist, A. V. Stout, C. K. Garrison, A. F. de Navarro, C. C. Leary, M. Wood and J. S. Stout.

THE trustees of the Brooklyn City Railroad Company, elected on the 8th inst., are: Seymour L. Husted, James How, George N. Curtis, Alexander Studwell, William H. Husted, Crowell Hadden, William M. Thomas, William H. Hazzard, Joseph Lyman, George W. Bergen, John C. Barron, Abraham B. Baylis, Daniel F. Lewis.

THE stockholders of the West Virginia Central and Pittsburgh Railway Company have elected the following directors for the ensuing year: Alexander Shaw, James G. Blaine, Augustus Schell, S. D. Elkins, William Keyser, J. N. Camden, T. Sickels, William H. Barnum and Thomas B. Davis. The officers are: President, H. G. Davis, and vice-president, S. B. Elkins.

At the annual meeting of the Cleveland and Pittsburgh Railroad Company, held at Cleveland, Ohio, on the 3d inst., the following directors were re-elected: J. N. McCullough, B. F. Jones, George B. Roberts, William Bucknell, Frederick Sturges, S. J. Tilden, Charles Lanier, William C. Eggleston, E. A. Ferguson, J. V. Painter, James F. Clark, R. P. Ranney.

THE stockholders of the Des Moines and Northwestern Railway Company met at Des Moines, Iowa, on the 5th inst., and elected as directors Jay Gould, A. L. Hopkins, Solon Humphreys, James F. Howe, J. S. Runnells, T. M. Hubbell, J. S. Polk, J. S. Clarkson, and

C. F. Wick. The road will be finished to its connection with the Northern Pacific and made a broad guage.

At the annual meeting of the Toledo and Indianapolis Railroad Company, recently held in this city, the following directors were elected: T. P. Brown, W. T. Walker, J. K. Hamilton, C. H. Coy, and N. W. Dyer. The officers are: T. P. Brown, president; C. H. Coy, vice-president and treasurer; N. W. Dyer, secretary; P. Dowling, general manager; J. K. Hamilton, general attorney.

At the annual election for managers of the Philadelphia and Reading Railroad Company, held in Philadelphia on the 8th inst., the following gentlemen were chosen: Franklin B. Gowen, J. B. Lippincott, Henry Lewis, I. V. Williamson, Eckley B. Coxe, Edward C. Knight, and Joseph B. Altemus. President, Franklin B. Gowen; treasurer, Samuel Bradford; secretary, Albert Foster.

THE directors of the Oil City and Chicago Railroad Company, elected on the 8th inst. are: J. W. Jones, Clarence H. Clark, George F. Tyler, E. A. Rollins, B. K. Jamison, Philadelphia; Archer N. Martin, Isaac F. Seligman, Calvin H. Allen, Edward L. Owen, New York; T. P. Pratt, E. P. Beals, Buffalo, N. Y.; William Patterson, New Castle, Pa. President, J. W. Jones; secretary, Joseph R. Trimble.

At the annual meeting of the Pittsburgh and Lake Erie Railroad Company, held in Pittsburgh on the 8th inst., the following directors were chosen: Jacob Henrici, David Hostetter, M. W. Watson, James I. Bennett, James M. Bailey, Herbert Dupuy, Ralph Bagaley, John Reeves, James M. Schoonmaker, A. E. W. Painter, J. H. Devereux, John Newell and D. Leet Wilson. President, Jacob Henrici.

THE following gentlemen were elected directors of the Buffalo, Pittsburgh and Western Railroad Company on the 8th inst.: J. W. Jones, Clarence H. Clark, George F. Tyler, E. A. Rollins, B. K. Jamison, Philadelphia; Archer N. Martin, Isaac N. Seligman, Calvin H. Allen, Edward L. Owen, New York; P. P. Pratt, E. P. Beals, Buffalo, N. Y.; Foster W. Mitchell, Oil City, Pa. President, J. W. Jones; secretary, Joseph R. Trimble.

At a meeting of the stockholders of the Columbus Consolidated Railroad Company, held at Columbus, Ohio, on the 3d inst., A. D. Rod-

gers, E. T. Mithoff, B. S. Brown, W. B. Hayden, S. S. Rickly, R. Jones, T. P. Gordon, Robert E. Sheldon and E. K. Stewart were elected directors. At a meeting of the directors, A. D. Rodgers was chosen president; H. T. Chittenden, vice-president; and E. K. Stewart, secretary and treasurer.

THE directors of the Pittsburgh, Youngstown and Chicago Railroad Company, elected on the 8th inst. are: C. H. Andrews, W. J. Hitchcock and L. E. Cochran, of Youngstown, O.; W. J. McKinnoy, J. H. Wade, William Chisholm and S. S. Ewart, of Cleveland; W. S. Bissell, J. A. Caughri, William B. Rodgers and William M. Short, of Pittsburgh, and Robert Garrett, of Baltimore. President, C. H. Andrews. The general manager reported that the construction party had begun laying rails.

THE directors of the Pittsburgh and Western Railroad Company, elected on the 8th inst., are: James Callery, J. W. Chalfant, M. K. Moorhead, A. M. Marsh, Jacob Painter, Jr., James Callery and H. W. Oliver, Jr., of Pittsburgh; Solon Humphreys, Walston H. Brown, John E. Downing, Anthony I. Thomas, Russell Sage and John T. Terry, of New York. President, James Callery. This road was lately changed from a narrow to the standard gauge, and is an important link on the Wabash system.

THE directors of the New York Canal and Railroad Company, elected on the 8th inst., are: Asa Packer, Robert H. Sayre, Charles Hartshorne, Victor E. Piolet, Garrett B. Lindeman, H. E. Packer, Robert Lockart, Wm. H. Sayre, Elisha P. Wilbur, James I. Blakeslee, Howard Elmer, Elisha Hancock and Frederick Mercur. President, Asa Packer. The traffic agreement of this company with the New York, Lake Erie and Western Railroad Company has been renewed with enlarged privileges.

THE Board of Directors of the New York, Chicago and St. Louis Railway Company is now constituted as follows: Cornelius Vanderbilt, William K. Vanderbilt, H. McK. Twombly, William C. Whitney, Augustus Schell and James Tillinghast, New York; J. H. Devereux, Stevenson Burke, J. H. Wade, Charles Hickox and D. W. Caldwell, Cleveland; Amos Sprague, Chicago; and George J. Magee, Watkins, N. Y. Excepting Gen. Devereux and Judge Burke, who were elected directors a few weeks ago, the only members of the former Board now a



director is L. W. Caldwell. William K. Vanderbilt was elected President.

THE stockholders of the New York, Pittsburgh and Chicago Railroad Company met in Pittsburgh on the 8th inst. and elected the following board of directors. H. E. Collins, W. N. Riddle, W. E. Schmertz, D. W. C. Carroll and James I. Negley, of Pittsburgh; Henry Day, W. S. Gurnee, Thomas P. Simpson and F. W. Lockwood, of New York; Charles Siedel, of Jersey City; James S. Robinson, of Kenton, O., and Louis Scott, of Waynesburg, O. President, James I. Negley. The work of construction is reported to be advancing favorably.

At the annual meeting of the stockholders of the Philadelphia, Wilmington and Baltimore Railroad Company, held at Wilmington, Del., on the 8th inst., the following board of directors was elected: Isaac Hinckley, S. M. Felton, S. M. Shoemaker, Jacob Tome, Charles Warner, Wm. Sellers, Christian Febiger, George C. Roberts, Frank Thomson, John P. Green, J. N. DuBarry, Wistar Morris, Edmund Smith, Henry M. Phillips and Benjamin F. Newcomer. At a subsequent meeting of the directors the following officers were chosen: President, Isaac Hinckley; vice-president, Frank Thomson, in place of A. J. Cassatt; secretary and treasurer, Robert Craven.

### CONSTRUCTION.

ONE hundred men are said to be at work on the Reading, Marietta and Hanover Railroad.

THE narrow-gauge railroad from Hiram to Bridgton, Me., is now laid to within less than four miles of Bridgton Village.

FOUR miles of the Essex Center cut-off are double-tracked. The remaining distance will be completed as soon as possible.

THE last spike has been driven in the rails of the new railroad at Woodstown, N. J. If the weather is favorable the road will be ballasted and opened for travel on the 15th inst.

THE New York, Chicago and St. Louis Railway has made a connection with the Baltimore and Ohio north of Monroeville, and is now constructing a connection with the Wheeling and Lake Erie at Bellevue.

It is expected that the Atlantic and Pacific Railroad will be completed to the junction with the Southern Pacific Railroad near the Colorado River, about the middle of March, and soon thereafter through trains to the Pacific coast will be put on.

THE Pennsylvania Railroad Company is laying a second track along the Raritan Canal bank, on the upper Delaware river, between Bordentown and Trenton, N. J. The single track line already there is insufficient to accommodate the increased traffic.

THE extension of the Pittsburgh, McKeesport and Youghiogheny up the Monongahela from McKeesport is located as far as Cheat River, and the intention is to extend it on to the Virginia iron, timber and coal fields, and to finally connect one of the southern systems of roads.

A CORPS of surveyors of the Baltimore and Potomac Railroad Company have commenced

the permanent location of the Catonsville Short Line Railroad. It will be four miles long, connecting with the Baltimore and Potomac tracks. The distance from Catonsville to Calvert Station will be nine miles.

THE New Orleans *Times-Democrat* says it is more than probable, although no definite information has yet been received, that the line of the New Orleans and Mississippi Valley Railroad will pass to the eastward of Natchez. The location of the line is now going on from Centerville northward to Vicksburg.

WORK was commenced on the 5th inst. placing the wire cable in its proper position on the Union Line's Traction Railway, on Columbia avenue, Philadelphia. All the other apparatus, including the winding machinery, is now completed, and the time occupied in putting the cable in place will determine the date on which the cars will commence running on the new railway.

THE Philadelphia, Norristown and Phoenixville Railroad is to be built in sections, and as fast as one has been finished contracts will be given out for work on the others. Contracts for building the three sections of the road, extending from Fifty-second street, Hestonville, to West Manavunk, have been awarded to Thomas Costigan, P. McManus and Frank Armstrong. The work is now under way and will be rapidly pushed forward.

It is reported that as soon as the port of Soto del Marino is opened by the Mexican government for the importation of railroad material, work will begin on the New York, Texas and Mexican main line from Soto del Marino to Tampico, and from Victoria to Brownsville, Texas. A contract for a large number of ties has already been let. It is stated also that Palmer & Sullivan have made arrangements with the Mexican government for the completion of the Matamoras and Monterey Railroad.

THE Pennsylvania Railroad Company has ordered \$1,000,000 to be expended in the grades of the West Penn. Railroad from Blairsville, Indiana county, to Butler, in order that it may be made a low grade road. At Butler it strikes the West Penn. and Shenango Connecting Railroad, which unites the Pennsylvania system with the Shenango and Allegheny system, the latter system uniting with the Erie and Pittsburgh system. It is thought probable that when the combined systems of railroads are in operation, about June 1, the entire tonnage of iron ores that is brought from the lakes and worked into metal at Johnstown will be brought over these systems, the grades being more favorable and the distance shorter than by the routes now followed.

THE Des Moines, Osceola and Southern Railroad has reached Davis City, in Decatur county, Iowa, ninety miles from Des Moines. It crosses the Chicago, Burlington and Quincy at Osceola and Humeston, and the Wabash at Van Wert. At Davis City it connects with the Des Moines and St. Joseph line of the Chicago, Burlington and Quincy. It will be extended to St. Joseph the present year, the money being already provided for that purpose, which will give a direct narrow-gauge road between Des Moines and St. Joseph, 180 miles long, and

passing through a very rich country. Traffic arrangements have been made with the Chicago, Rock Island and Pacific by which freight will be billed from any station to any station on either road, and passengers will be sold tickets in like manner.

THE Mexican *Financier* says that the city of Pachuca has been united by rail with the Mexican Railroad at Irolo that the International Construction Co. is steadily advancing from Piedras Negras, on the Rio Grande, and is everywhere received with demonstrations of immense popular enthusiasm and approval; that the building of the Tehuantepec Railroad is pushing on from Salina Cruz under the direction of Government engineers—1,000 men being at work along a stretch of twenty-five miles; that a concession has been granted for a railroad connecting the cities of Mexcanu and Ticul; and that the anniversary of the founding of the city of Merida, Yucatan, was to have been celebrated on the 6th inst. by the formal opening of the railroad from Peto, the branch-line from Acanohc to Tecoh, the railroad from Calkini to Merida, from Merida to Ilman, and the road from Merida to Conchal.

### Legal Wrongs Spring only from the Neglect of Legal Duties.

In the case of Samuelson, Admx., against the Cleveland Iron Mining Company, the plaintiff was defeated, and she appealed to the Supreme Court of Michigan, which affirmed the judgment. In this case a miner was killed by the falling of the roof of an iron mine, the necessary supports not having been put in place, and his administratrix sued the owner of the property for damages. The mine was worked by contractors under an agreement with the company, by which it was expressly stipulated that, in view of the dangers of mining in that vicinity, the contractors and not the owner should be liable for any injuries to the workmen. The mine was in a safe condition when the contractors took possession of it, but they conducted the work negligently in putting up supports for the roof, which fell in consequence. The lease of the mine provided that the owner should send its superintendent, without charge, to supervise, advise and direct the precautions to be taken to make the mine safe for working, but no such supervision was exercised. Judge Cooley, in the opinion, said: "If the mine were in unsafe condition when it was handed over to the contractors, and this unsafe condition was known to the company, and if in consequence of that condition a miner was brought there in ignorance of it, and was killed, the company should be held responsible. Every man who expressly or by implication invites others to come upon his premises assumes to all who accept the invitation the duty to warn them of any danger in coming, which he knows of or ought to know of, and of which they are not aware. So long as this mine was worked under the contract, all responsibility for the care and safety of the mine was upon the contractor alone. The matter of supervising the cautionary steps, though neglected, worked no injury to the plaintiff. The company owed him no duty, and legal wrongs spring only from the neglect of legal duties."

### Canadian Pacific Railway.

On the 1st of January, 1882, the mileage of the Canadian Pacific Railway, constructed and track laid, was as follows:

	Miles.
Winnipeg to Cross Lake.....	98
Winnipeg to Emerson.....	68
Winnipeg to west end of track.....	166
Winnipeg to Portage la Prairie (old line).....	68

Total, January 1, 1882..... 400

On the 1st of January, 1883, the mileage completed and track laid, and over which trains—freight, passenger and mixed—are continually running is as follows:

	Miles.
Winnipeg to Rat Portage.....	135
Winnipeg to Emerson.....	68
Winnipeg to west end of track.....	605
Winnipeg to Gretna.....	69
Pembina Mountain Junction, to west end of track.....	45
Stonewall Branch.....	21

Total, January 1, 1883..... 943

In addition to which the following new side tracks have been completed during the year:

	Miles.
South of Winnipeg.....	2½
East of Winnipeg.....	1½
Southwestern Branch.....	3½
Between Winnipeg and Oak Lake.....	6
At Winnipeg.....	10
West of Oak Lake.....	30

Total..... 53½

For every mile of road constructed, 2,640 ties are required, which gives a total of 1,434,520 ties used during the year, and for every mile of track 88 tons of rails are used, giving 47,784 tons of rails on the main lines alone, or taking the sidings and main line together we have, ties 1,564,440 and rails 53,448 tons.

It will thus be seen that since the present Canadian Pacific Railway syndicate took the work in hand it has been pushed forward with surprising rapidity, opening up thousands of acres of new territory to the profit of the Dominion at large, and of Winnipeg and Manitoba particularly.

On the 10th of April, 1882, the line between Cross Lake and the Winnipeg River at Rat Portage was turned over by the Dominion Government to the syndicate, the distance being 37 miles. Track-laying on the Western Division commenced at Oak Lake, and will reach by the 15th inst. a point eight miles west of Maple Creek, which will be 439 miles of Oak Lake, and 605 miles west of Winnipeg, and 55 miles east of the Saskatchewan River. Between the point to which the track is at present laid on the Western extension and the Saskatchewan River, grading has been done in patches to the extent of 15 miles, which leaves 40 miles more grading to be done to complete the line to Leopold, the name of the town which is to be located at the crossing of the Saskatchewan River. On the main line west, 30 miles of siding have been graded and track laid over them which gives 469 miles of track laid west on the train line.

The grading has also been completed and the track laid on the Pembina Mountain section extension 101 miles southwest of Winnipeg, and 14 miles from the junction to connect the section with the main line at Gretna. Grading has also been finished and some of it is ready for track-laying on the line running to West Selkirk on the west side of Red River. During the year the track on the old line between

Stonewall and Portage la Prairie, a distance of 46 miles, was taken up, and the grade on the Air Line was raised throughout its entire distance from three to six feet to guard against and prevent the troublesome experience of last year on that portion of the road during the spring floods.

Besides the work of construction above recounted, three new telegraph wires have been stretched between Brandon and Winnipeg, two between Brandon and Swift Current, two between Winnipeg and Emerson, and two between Winnipeg and Rat Portage, and telegraphic communication is kept up to the end of the track every day. The line has been fenced on both sides between Winnipeg and Emerson, Winnipeg and Portage la Prairie, Winnipeg and Selkirk, and portions between Winnipeg and Rat Portage.

A very large amount of money has been expended on new depots, in many cases the buildings being combined passenger and freight, each two stories high and substantially built; to which should be added water-tanks, coal sheds varying from 3,500 to 6,000 tons capacity, engine houses and machine shops—involving an outlay of many thousands of dollars. In Winnipeg alone an engine house has been built with stalls for 38 engines, and is lighted by electricity. A ten-stall engine house has been built at Rat Portage, and twelve-stall buildings at Brandon, Broadview, Moose Jaw and Swift Current.

In addition a large machine shop fitted up with the newest and most costly machinery has been erected in Winnipeg; also a blacksmith's shop, foundry, tin shop, and engine room, and a large store house.

To carry out all this work has involved the expenditure of over \$20,000,000, a large proportion of which amount has been spent in the northwest. At the end of the track a large army of men has been employed all spring, summer and fall, and just as soon as the frost leaves the ground, work will be resumed. It is the intention of the company to reach the Rockies before the first of August next, and this winter they have a small army of men at work on that portion of the line which lies to the north of Lake Superior, hoping to have passenger and freight trains running over it before the end of five years. Nor has the syndicate confined its operations exclusively to the construction of the railway. There are at present being built in Scotland four swift steel propellers to navigate the waters of Lake Superior and Lake Huron, to connect at Prince Arthur's Landing with the main line. Such in brief is a record of what the syndicate has done the past year in the northwest, and who will say that "The Star of Empire" is not making its way west at a lively gait?

### Population of European Cities.

THE following statistics of the number of inhabitants of some of the principal cities in Europe have been recently issued by Behm and Wagner. There are ninety-two cities in the whole of Europe each containing a population of more than 100,000, but only four which have more than a million, viz: London, 3,832,440;

Paris, 2,225,910; Berlin, 1,222,500; Vienna, 1,103,110. Of the other capitals, St. Petersburg possesses 876,570; Constantinople, 600,000; Madrid, 367,280; Buda-Pesth, 360,580; Warsaw, 339,340; Amsterdam, 317,010; Rome, 300,470; Lisbon, 246,340; Palermo, 244,990; Copenhagen, 234,850; Munich, 230,020; Bucharest, 221,800; Dresden, 220,820; Stockholm, 168,770; Brussels, 161,820; Venice, 132,830; Stuttgart, 117,300. In addition to these, Moscow contains 611,970; Naples, 493,110; Hamburg, 410,120; Lyons, 372,890; Marseilles, 357,530; Milan, 321,840; Breslau, 272,910; Turin, 252,830; Bordeaux, 220,960; Barcelona, 215,960; Odessa, 193,510; Elberfeld, 189,480; Genoa, 179,510; Lille, 177,940; Florence, 169,000; Riga, 168,840; Prague, 162,520; Antwerp, 150,650; Adrianople, 150,000; Leipsic, 149,080; Rotterdam, 148,000; Cologne, 144,770; Magdeburg, 137,130; Frankfurt, 136,820; Toulouse, 136,630; Ghent, 127,650; Messina, 126,500; Hanover, 122,840; Nantes, 121,960; Liege, 115,850; The Hague, 113,460; Oporto, 105,840, and Rouen, 104,010.

### Carolina, Cumberland Gap and Chicago Railroad.

Two mortgages in favor of the Farmers' Loan and Trust Company, of New York, on the Carolina, Cumberland Gap and Chicago Railroad have been filed in the office of the Clerk of Anderson county, S. C. One is a first mortgage, amounting to \$10,000,000, and the other is an income mortgage amounting to \$7,000,000. In order to equip the road the company has resolved to issue 10,000 first mortgage six per cent gold bonds of \$1,000 each, to run thirty years and coupons to be paid semi-annually. In order to secure these bonds the company has given to the Farmers' Loan and Trust Company the mortgage of \$10,000,000 on the right of way, road-bed, road-fixtures, rolling-stock, etc., and also the mortgage of \$7,000,000 on the profits of the road. The bonds are to be issued at the rate of \$22,000 per mile, and the conditions provide that until default be made in the payment of the interest and principal of these bonds the company shall run and enjoy the profits of the road, and if the company pays the amount of interest and principal then the mortgage and trust shall be void. The mortgages are being recorded in every county through which the projected line runs.

The Carolina, Cumberland Gap and Chicago Railroad Company results from a consolidation of the following corporations: The Atlanta and French Broad Valley Railroad Company of North Carolina; the French Broad and Atlantic Railway Company of South Carolina; the Edgefield, Trenton and Aiken Railroad Company of South Carolina; the Morristown and Carolina Railroad Company, of Tennessee; the Morristown, Cumberland Gap and Ohio Railroad Company, of Tennessee; and the Cumberland Railroad Company, of Tennessee. The total length of the road is about 400 miles. Ex-Gov. Haygood, of South Carolina, is president of the company.

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tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing for our  
columns any items of personal information, which may  
come to their knowledge, and are adapted to this de-  
partment. We aim to record all new railway enter-  
prises in the United States and Canada, and to note  
the progress of construction on all new roads and exten-  
sions; and we request all concerned in railway building  
to give us early information regarding the above, that  
our reports may be as complete as possible.

Subscribers are requested to report to our office any  
irregularity in receiving the JOURNAL.

Contributed articles relating to Railroad matters gen-  
erally, Mining interests, Banking and Financial items,  
Agricultural development, and Manufacturing news, by  
those who are familiar with these subjects, are especial-  
ly desired.

Entered at the Post Office at New York City as Second-Class  
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New York Saturday January 13, 1883.

When writing to any of our adver-  
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ROAD JOURNAL.

## PRINCIPAL CONTENTS.

Organization.....	25
Construction.....	26
Canadian Pacific Railway.....	27
Carolina, Cumberland Gap and Chicago Railroad.....	27
EDITORIAL:—	
Growth of the Narrow-Gauge Railroad System.....	28
Railroad Medical Service.....	29
Our Canadian Letter.....	30
Stock Exchanges and Money Market.....	32-34
Railroad and Canal Dividend Statement.....	36
Railroad Earnings—Monthly.....	38
Training Car Conductors.....	40
Incorporation.....	40
The Prospective Terminus of a Trans-Continental Railroad.....	43
Statement of the Public Debt.....	44
List of Master Car Builders.....	46
List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Machinery, etc.....	48

## GROWTH OF THE NARROW-GAUGE RAILROAD SYSTEM.

OUR older readers will remember the  
"Battle of the Gauges" which was  
fought from 25 to 30 years ago with great vehe-  
mence. This was a controversy as to the  
superiority of merit of the 6 feet as contrasted  
with the 4 feet 8½ inch gauge. The wide gauge  
was that adopted by the somewhat renowned  
English engineer BRUNEL, upon which the  
Great Western Railway was built, and which  
for a time made a bold push for the position  
of the best administered line in the world.  
The New York and Erie Railroad and its exten-  
sion, the Atlantic and Great Western, and the  
Ohio and Mississippi, and some other minor  
pieces, were built upon that gauge. In the  
meantime several of the roads, chiefly at the  
South, had been built of a compromise, or 5  
feet 6 inch gauge.

When the railroad to the Pacific was author-  
ized in 1862, the question of gauge came up,  
and the battle raged with some fury in this  
country. The selection was finally left to  
President LINCOLN, and among the considera-  
tions which determined him to adopt the gauge  
of 4 feet 8½ inches was undoubtedly the fact  
that the railroads pushing across Iowa to  
Council Bluffs were of that gauge, while those  
extending across Missouri were of the Southern  
gauge.

Since that time there has been considerable  
discussion as to whether or no a still narrower  
gauge would not possess greater advantages.  
The most of the arguments used in favor of  
the 4 feet 8½ inch gauge against its wide antag-  
onist, have been adopted and used with effect  
against what is now the "standard" gauge.  
The reasoning runs thus: "If a 5 feet gauge is  
so much better than a 6 feet, why is not a 4  
feet still better than a 5 feet, and a 3 feet still  
better than a 4 feet?" There is to be said in  
favor of the narrow-gauge: the smaller first  
cost, the narrower road-bed, shorter cross ties,  
and smaller excavations of rock and tunnels—  
all of them important elements in the first cost  
of construction, and when in a sparsely settled  
country, where railroads are necessarily distin-  
guished for their length rather than their heavy  
traffic, first cost is often the supreme considera-  
tion. The narrow-gauge, however, involves  
lighter rails, and lighter engines and cars, and  
consequently lighter trains drawn by engines  
of less power. There is a saving of first cost  
in material, but not much saving in the ex-  
penses of train hands.

But the narrow-gauge roads have their  
place; and if the general judgment of engi-  
neers and capitalists of to-day may be summed

up, it would be substantially to this effect;  
that for communication between two great and  
important centers, or for lines running through  
a mineral bearing district, where heavy traffic  
is to be borne, the standard gauge is indispen-  
sable; but that in sparsely settled country,  
over lines connecting widely distinct places,  
with but little intermediate local traffic, the  
narrow gauge may be used with advantage.  
This is particularly true of the mining regions  
in the Rocky Mountains and beyond. It is  
still a question as to how much of a competi-  
tor the narrow-gauge road will prove to a  
standard road running parallel through a thick-  
ly settled productive country. Nevertheless,  
this experiment is to be tried, and the past two  
years have been noticeable for the extent of  
3 feet gauge road laid in this country.

The 3 feet system has hardly become knitted  
together in all its parts so as to constitute one  
network, and at present is on the eve of joining  
two or three of its principal ganglia together.  
The narrow gauges are in three principal groups  
of roads:

First, there is what is known as the Ballou  
road, whose main line stretches from Toledo to  
East St. Louis. It has, however, an important  
extension from the main line to Dayton, and  
from Dayton eastward to the coal fields in  
Jackson county, Ohio, with a fork from that  
line to Cincinnati. It extends no further north-  
eastward than Toledo, but it is proposed to ex-  
tend the Cincinnati Northern line in a north-  
easterly direction until it reaches Columbus.  
In the eastern part of Ohio is a road called the  
Connotton Valley, one end of which rests upon  
Lake Erie at Cleveland, and the other in the  
coal fields near Straitsville; and plans are now  
maturing for a connection of this road with the  
Ballou system at Columbus. The Connotton  
Valley aspires also to get into Pittsburgh. But  
it will be noticed that none of these combina-  
tions bring the connected narrow-gauge system  
further east than Pittsburgh on the one side,  
or Ironton on the other. It is true, projects  
have been started for building narrow-gauge  
roads from Washington and Baltimore west-  
ward in the direction of Cincinnati, but no pro-  
gress has been made with the work, and so far  
as can be learned, no money raised for that  
purpose.

At the West, however, the narrow gauges  
have done a good deal of work. From East  
St. Louis to Cairo a narrow-gauge road has been  
in operation for some time. It has recently  
passed under the control of what is known as  
the "Paramore" syndicate, which has con-  
structed an extension from a point opposite  
Cairo across Arkansas to Texarkana; only a  
small gap of 40 miles, on either side of the

White River, remaining to be ironed. The original stem line of the "Paramore system" was built from Texarkana in a southwesterly direction across Texas, nearly parallel with, but at some distance from, the International road of that State, and has been carried to a point called Gatesville, about 50 miles west of Waco, at which former point it connects with the Gulf, Colorado and Santa Fe system of Texas. This gives what is, or soon will be, a continuous narrow-gauge line from St. Louis to Southwestern Texas, penetrating a rich cotton country, and competing with the Iron Mountain (Gould's) system of southwestern roads. Report at one time stated that the "Paramore system" of lines would not halt until it had reached the Rio Grande at Laredo, the terminus of Gould's International road. At present, no work is being done south of Gatesville, but as it connects with no narrow-gauge road at that point, it must be supposed that it will be extended until it intersects the third group of narrow-gauge roads somewhere on the Rio Grande frontier.

The Palmer narrow-gauge roads consist of the Denver and Rio Grande and its numerous branches, having Denver for their main terminus. An extension is on the eve of completion westward to Salt Lake and Ogden, where connection is made with the narrow-gauge road known as the Utah Northern, under the control of the Union Pacific, and not now a fraternizing company. It also has a southerly extension to within a few miles of Santa Fe, N. M., and is only barred out of that city by the terms of an agreement with the Atchison, Topeka and Santa Fé. Palmer is known as an adventurous, bold and hitherto successful railroad builder, who has had the good fortune to locate his lines in a country developing rich minerals. He has undertaken the construction of some 2,000 miles of railroad in the Republic of Mexico, and has begun at the city of Mexico, and also at the Rio Grande frontier at Laredo. He is credited with an intention to connect his roads centering at Laredo with the Colorado system terminating at Santa Fé. There is an interval between them of 1,000 miles, and a company has been organized to construct a road between those points, called the Rio Grande and Pecos Railway, of which Gov. Hunt, an associate of Palmer's in Colorado enterprises, is president. Such a road already begun from Laredo north, where, if prolonged, will pass along the Pecos Valley in western Texas, would afford a connection not only with the Colorado roads, but also with the Paramore line, or Texas and St. Louis roads, somewhere in the vicinity of Fort Clark. It is quite conceivable that the gap between Gatesville and La-

redo, say 450 miles, may be closed by the respective companies building to a meeting point; inasmuch as it traverses a fertile country with coal mines at the southern end, even if the Colorado connection should not be built, which passes almost wholly through a sterile country.

It will not be long, therefore, before there will be a continuous line of narrow-gauge railroad from Pittsburgh, Cleveland and Ironton to St. Louis, and from St. Louis diagonally across Arkansas and Texas to the Mexican frontier at Laredo. From Laredo a line is in operation (162 miles) to the Gulf port of Corpus Christi, and from Laredo south to Monterey, 141 miles further. It is the intention to connect the road in northern Mexico with the system built from the city of Mexico of the same gauge, at present amounting to about 200 miles.

Within two years, therefore, it may be practicable to traverse in the same car, without changing the gauge, the distance between Pittsburgh and Southern Mexico, some 2,400 miles. The narrow-gauge is a lively infant, but whether it will ever grow to be a serious competitor with the standard gauge roads, it is too early to predict.

#### As Other People See Us.

[Cairo (Ill.) Daily Argus].

WITH its issue of the 30th of December, the "AMERICAN RAILROAD JOURNAL," New York, was fifty-two years old, the oldest periodical in the world devoted to railroad interests and news. When its publication was commenced the railroads were few, and hence its field was insignificant compared with what it now is. But the paper has kept pace with the development of its specialty, and is yet probably the best railroad weekly in the United States. It does not contain the amount of rumor and light gossip that some papers of its class do, but it contains all the news of importance, and is reliable. Its stock reports are especially valuable. The long experience of its conductors make them safe counsellors, who are thoroughly posted in everything relating to railroads. They are naturally conservative, as age and experience render all people so, and they are independent, looking to the welfare of all classes of railroad folks impartially, and to the public weal as well.

THE present of a subscription to the AMERICAN RAILROAD JOURNAL is a suitable recognition of faithful service by a faithful clerk, or other employé. Three dollars' worth of information supplied in fifty-two numbers of a handsome periodical, to an intelligent railroad employé cannot but improve his value to the person or company employing him. His interest and enjoyment of his work are heightened by an enlarged acquaintance with the great interest in which he has a part.

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#### RAILROAD MEDICAL SERVICE.

BY S. S. HERRICK, M. D.

SECRETARY OF BOARD OF HEALTH, STATE OF LOUISIANA.

#### THE NETHERLANDS.

I AM indebted to Mr. N. T. Michaelis, a high railroad official at the Hague, for the following particulars:—

Most of the railways of the Netherlands were built at the expense of the State; but a few lines were projected and built by companies. The Government operates no railroad itself, not even those which it has constructed; but the most are operated by a company called the Operating Company of the State Railways, and a smaller portion by the Dutch Railway Company. These two companies likewise operate other lines, either as owners or for third parties, and there are several others of less importance, among which may be named the Rhemish-Netherland Company.

These companies are completely independent in respect to sanitary regulations for their personnel, the only matter in which the Government interferes having reference to train accidents. On this point a royal decree proclaimed that the Minister shall determine what measures are to be taken to render the first relief to the wounded and remove them from the scene. Moreover, every station and passenger train must be provided with a stretcher and a chest containing the necessary instruments, medicines, etc., for rendering the first relief to the wounded. The construction and contents of the chest are directed, and a little book has been provided for the different companies, containing the necessary instructions for making use of the above means of relief.

In addition to the foregoing State regulations, the following have been adopted by the Dutch Railway Company, previously mentioned:—

The medical officers are chosen by the administration, and are remunerated for their service according to a fixed tariff, in each case treated. Each physician has a definite territory, which, in a large town does not extend beyond its limits, and attends all employes to whom he is called, or who are sent to him by the proper railroad officials.

Employes are entitled to medical attendance in ordinary sickness, as well as in case of injury; but exception is made of cases growing out of drunkenness, brawls and venereal infection. The families of employes are not included in these privileges. To meet the expense of this service, all employes are taxed one per cent of their regular pay; but it is not stated whether this amount is found sufficient.

The company has no hospital of its own, but sick and wounded persons are sent to civil hospitals at the expense of the company, whenever the medical officer deems it to the advantage of the patient. In a country so densely populated as Holland, with large towns at short intervals, it would be found less expensive, and probably quite as satisfactory to the patients, to make arrangements with the authorities of hospitals conveniently located.

Benevolent associations among the employes



for mutual relief to sufferers in sickness or injury, or to their families in such case or in event of death, have not existed. Only lately such an organization has been inaugurated among the guards (conductors) of trains.

To my inquiry relative to physical examination of employes and its nature, it is answered that some classes are subjected to tests of vision. These are officers of the stations, conductors, locomotive-engineers, laborers and attendants along the line, and generally all those who have to distinguish signals. It is not stated how the examination is conducted, but it is to be presumed that it is made by the medical officers. I infer also that the examination has reference only to such visual defects as color-blindness and near-sightedness.

The medical officers of the company are not required to look after the personal hygiene of the men, nor the sanitary condition of railway carriages, buildings, grounds, etc. There are no regulations relative to the transportation of live-stock, to prevent overcrowding, deprivation of food and water, and too long confinement *in transitu*, but the owners are privileged to travel with the animals or send attendants with them, and are required to assume all the above risks.

The Rhemish Railway Company reports that "medical and sanitary regulations are established by law." [From what has been said before, these regulations must be limited to measures of relief in case of accident.]

This company has no medical officers, no hospitals, no medical service save to those injured in accidents. The first relief in such cases is remunerated by the company, and it is to be presumed that they run for the nearest doctor to use the contents of the medicine-chest which is carried on every passenger train.

The workmen in the shops have an association among themselves for compensation to their families in case of death. This must be a kind of life-assurance, of limited application, the like of which is quite common in this country.

Every person proposing to enter the company's service has to make a declaration that he is of sound constitution, free from any disease, or defect of the senses; but it is not stated whether this is fortified by a medical certificate after a physical examination. It might be "all the same in Dutch," but hardly be equivalent in lands above tide-level.

The number of animals to be transported in a railway car depends upon the superficial floor-space, but there are no regulations relative to length of confinement, or food and water. Nothing is said about measures to prevent pestilential diseases from being disseminated through the medium of stock-cars.

If these two companies are fair representatives of the medical service on the Netherland railways, it is far behind that of France, and decidedly inferior to that of Austro-Hungary. Doubtless the limited mileage of those railways has much to do with the matter, the total area of the country being but little more than that of the State of Delaware. Everything consequently is in a smaller scale than we find on lines traversing long stretches of territory, employing large numbers of men under one man-

agement. The cost of administration in every department must consequently be greater on the short roads of Holland, and a well-organized medical department would be too large an undertaking for the capital and personnel of those liliputian corporations.

It will be seen hereafter that this principle is borne out in our own country, by comparison between the short lines of New England with the extensive systems of the central, western and Pacific States, which are far in advance of the eastern railways in respect of medical organizations. And this is one of the many advantages derived from the consolidation of numerous small and weak companies into a few large and powerful corporations, able to inaugurate enterprises and improvements totally beyond the ability of the separate constituents.

[TO BE CONTINUED.]

### A Good Suggestion.

THAT of our Legislature in causing all passenger and baggage cars to be equipped with tools for the protection of life in case of accident. Our attention being called to the different methods adopted by the various railroads, it seems to us that the device for carrying tools inside and outside recently patented by Messrs. Harden and Doyle, of the Boston, Lowell and Concord Railroad, Boston, and approved by the Railroad Commissioners, is the most practical and convenient for instant use. We understand that over four hundred passenger and baggage cars running in New England are already equipped with this invention, very much to the satisfaction of the traveling public.

### Underground Railway in Naples.

THE underground railway which is to unite the different parts of the city of Naples is receiving much attention from engineers, in its technical and topographical relations. According to the plan now projected, a portion of the railway will be in the open air and a part in tunnels under the hills that lie west and north of the city, and under some of the principal streets. Instead of steam, compressed air will be employed, and the tunnels and cars lighted with gas, according to the most improved system. One of the novelties of this railway is, that from an underground station in the body of a mountain called Vomera it will be connected by means of a subterranean lift, with an open air railway immediately above, running through the villages on the top of that mountain. From the underground station, this lift will ascend more than 500 feet to reach the upper station on the top of the Vomero.

THE Secretary of the Treasury has authorized the coinage of a five-cent nickel piece of a new design, "which is considered as being more in accordance with the law as regards weight and inscriptions than the present five-cent nickel piece." The new coin is a little heavier than the present one and a little larger and thinner. On its face is a head of "Liberty," surrounded by thirteen stars; on the reverse a wreath surrounding a Roman numeral representing the denomination of the coin.

## CANADIAN DEPARTMENT.

MR. JAMES J. WHITE, Ottawa, Canada, writer of "Our Canadian Letter," acts as agent for the AMERICAN RAILROAD JOURNAL COMPANY, in Canada. He is authorized to receive, in behalf of the company, subscriptions and advertisements for this journal; also news of the character which he can utilize in the preparation of his Letter, or send to us for use elsewhere within these columns. He respectfully invites information concerning Railroad matters generally, Mining, Banking, Finance and Manufactures.

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

THE ONTARIO LEGISLATURE AND DOMINION PARLIAMENT—REVENUE OF THE DOMINION—CANADIAN PACIFIC AND OTHER RAILWAY NOTES.

#### LIFE AND LIMB SAVING APPLIANCES.

OWING to the great loss of life and maiming on railways caused by the ordinary coupling system, the Dominion Government should be urged to legislate in the matter, by making it compulsory for railway companies to adopt some life and limb saving brake. There are many of these useful inventions. A commission should be appointed by Government to whom these appliances might be submitted for examination, and after being thoroughly tested, recommended.

The Ontario Legislature will probably close its work about the beginning of February, and the Ontario elections will be held in the same month.

The Dominion Parliament, which assembles on the 8th of February, will not close before the latter part of April or the beginning of May. The Canal Free Toll question, readjusting the tariff to meet the requirements of the country and other important matters, which will bring on debate, will prolong the session.

Among the applications to Parliament is one for an act to incorporate a company to build a line of railway from the terminus of the Ottawa and Gatineau Valley Railway, at the confluence of the Desert and Gatineau rivers, to some convenient point on the Hudson Bay, and for an act to incorporate the Canadian Electric Light Company.

Eddy Mills, at Hull, near Ottawa, that were some time ago destroyed, are being built very rapidly. There are some fifteen electric lights used at night, thus enabling large gangs to work. Mr. Eddy is an American, and like several other of his countrymen who are largely engaged in mills and lumbering, is the life and soul of these parts.

The revenue of the Dominion of Canada for the month of December, 1882, was \$2,480,764.61, and expenditure, \$1,509,812.28. The first six months of the fiscal year 1881-82 closed December 31. The figures below represent the revenue and expenditure for that period as far as they have been received by the Finance Department up to the date above named: Revenue, \$18,065,597.83; expenditure, \$12,519,335.22—surplus for the six months, \$5,546,262.61.

Large quantities of iron ore are being shipped to the United States from Kingston, and as the duty will be reduced shortly, it will be a great benefit to Canada.

Thousands of hop poles, are being shipped from Prescott to the United States.

The cold last week was very severe, the thermometer ranging from 16 deg. to 32 deg. below zero in Ottawa and the neighboring counties.

Lumbering operations in the Ottawa Valley are being actively carried on, and as there is an abundance of snow and the weather favorable, the cut this year is expected to be very large.

#### RAILWAY NOTES.

The Kingston and Pembroke will apply to Parliament to have its charter amended to enable them to build branch lines to Westport, Smith's Falls and Egansville, and thence to the Georgian Bay; they will also ask for an increase of the capital stock of the company.

#### THE TORONTO AND OTTAWA RAILWAY.

Last week work between Perth and Bridge water was stopped, and the workmen paid off and told work would be resumed next April. There are rumors that the syndicate want to buy the charter from the Midland Railway, so as to shut out all competition by the Toronto and Ottawa route. Further developments are looked for with much interest. In the meantime the Ontario and Quebec line is pushing on vigorously.

A petition was presented on Friday last to the Ontario Legislature praying for the incorporation of the Niagara Falls Park Company. Many leading men of all parties oppose the private or company scheme, and say that any park scheme at Niagara Falls will be an injustice to many of its property owners, and that if any park is established it should be by the Ontario and Dominion Governments.

The Grand Trunk Railway traffic is so great that the Midland Railway, from Toronto to Belleville, has to be utilized to relieve the freight blockade. The double-track intended to be put down in the spring on the Grand Trunk, will be also tested to its fullest capacity, as the traffic is increasing very rapidly.

#### THE ICE PALACE.

The Ice Palace has been located on Dominion Square, and the work of construction begun. Forty thousand square feet of ice will be used in its construction, and over one hundred men are now at work on it. Several of the leading families of New York have engaged rooms at the Windsor.

The liabilities of Perry & Cassels, boot and shoe manufacturers, of Montréal, who lately failed, owing to Perry giving notes away without his partner's knowledge, are \$124,000, and the assets \$62,000. Some \$8,000 of goods are unaccounted for. Mr. Cassels will assign and obtain a discharge from his creditors.

The Montreal Rolling Mills were burned on Thursday last—loss 90,000 mostly covered by insurance.

#### CANADIAN PACIFIC RAILROAD NOTES.

During 1883 the main line on the western division will be advanced to the Rocky Mountains, a distance of about 950 miles from Winnipeg. The branch from Emerson to the South-western branch of the Canadian Pacific Railway, a distance of twenty-two miles, will be completed.

The Selkirk branch, twenty-three miles long,

will be completed. The road will be completed to a point some 130 miles west of Callendar, near Lake Winnipeg. The Algoma branch from Whanapitæ River to Algoma, some 110 miles will be completed. It is intended to complete the line from Thunder Bay eastward to a point about forty miles east of the Nipigon River, or 105 miles east from Prince Arthur's Landing.

The Canadian Pacific Company declares that work will be begun at all available points along the north shore of Lake Superior, and carried on vigorously. In the Pic and White River districts the country is very rocky, and offers great obstruction, but the company expect to construct short sections east and west of the Pic River.

The Canadian Pacific Railway rolling-stock includes some 100 locomotives, sixty box-cars, sixty baggage-cars, forty passenger cars, and over 3,000 flat cars, and to this number will be added a large number of locomotives and other cars in the spring.

It is reported in Montreal that Amsterdam capitalists will take \$50,000,000 of the Canadian Pacific Railway stock.

#### BRITISH COLUMBIA.

During eleven years past, Victoria has paid \$50,000,000 in customs duties. On dutiable goods imported last year, \$300,000; free goods, \$450,000. Exports show a still more remarkable increase. Exports for the year were \$4,500,000; for the last quarter the exports reached the unprecedented sum of \$1,339,000. These figures do not include lumber shipments for the last half year, or fish shipped direct from Fraser River, which will swell the total exports for the half year to \$1,650,000. These figures show a great expansion of the trade of the Province; and of Victoria in particular.

A company has been organized at Victoria with a capital of \$500,000, to manufacture agricultural implements, stoves, nails, and every kind of iron work.

#### MARITIME NOTES.

Some 200 tons of rich silver ore is about to be shipped to Boston by the Elm Tree Mining Company, operating in Gloucester county, N. B.

#### THE DALHOUSIE BRANCH RAILWAY.

It is understood that the Dominion Government will construct this important branch of the Intercolonial. There is open water at Dalhousie during nine or ten months of the year.

#### THE OTTAWA, WADDINGTON AND NEW YORK RAILWAY.

An influential delegation waited on the Ontario Government last week, and asked assistance for the road. The deputation pointed out the great benefit its construction would confer on the counties through which it will pass as well as Ottawa, and the Ottawa Valley generally. The fact that Ottawa was destined to become a great railway center, and that the building of the road would materially assist in opening up a great trade in connection with the various railways centering at Ottawa, that would be of the greatest commercial benefit to Ontario. The Hon. Mr. Mowat received the deputation cordially, and promised that the Government would look into the matter carefully, and inform themselves of the standing

of the promoters and the ability of the people to construct the road, providing they obtained the bonus.

"W."

OTTAWA, Jan. 11, 1883.

#### Arkansas State-Aid Bonds.

In referring to the recent decision of the United States Circuit Court relating to the Arkansas State-Aid bonds, the *Little Rock Gazette* says:

"The railroad aid bonds were issued by the State under the act of 1868. They were accepted and used by five railroad companies, to which the following issues of bonds were made: Little Rock and Fort Smith, \$1,000,000; Little Rock, Pine Bluff and New Orleans, \$1,200,000; Mississippi, Ouachita and Red River, \$600,000; Memphis and Little Rock, \$1,200,000; Arkansas Central, \$1,350,000—total, \$5,350,000.

"The Memphis and Little Rock Railroad Company owns and holds \$938,000 of the \$1,200,000 bonds originally issued to that corporation, and the bonds owned and held by the Little Rock and Fort Smith Railway Company amount to \$644,000. These bonds were purchased years ago upon advice of counsel at very low figures, with a view of hedging against a possible decision by the courts holding the railroads and not the State liable for the bonds issued to those corporations. The remainder are outstanding. Of the railway corporations above named, all but one—the Arkansas Central, which is understood to be in a bad condition—are thoroughly responsible, and fully able to liquidate the claims due on these bonds. Two of them, as already explained, have taken the precaution to so provide as to make settlement easy should the recent decision be affirmed by the Supreme Court of the United States. And of this there seems little doubt. The law and the facts appear to be conclusive on all points. The questions involved in these suits are of vital importance to the people of Arkansas. Of the railroad bonds authorized under the act of 1868, the issue to the railroads aggregated \$5,350,000. They form a part of the grand total of \$13,000,000 for years past in dispute, and to prevent the payment of which the proposed 'Amendment No. 1' to the Constitution of the State of Arkansas was framed and submitted to the qualified electors in 1880."

A WAGGISH friend having read that there is the probability of our going to bed by the aid of electricity, suggests that a greater genius than the electrician as yet developed, would be the inventor of an electric machine for getting one up in the morning. "There's the rub," says he; "any fool can go to bed."

"CLARA" writes: "I think it is real mean of the papers to intimate that lovers increase the expenses of living on account of the extra consumption of coal and gas every night. It is not true. It is easy enough to keep warm, and as for light, who wants it?"

PENMAN's hand paralysis can be greatly remedied by using an all wood penholder and Esterbrook's turned up point Pens. Ask your stationer for them.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Jan. 10.

	Th. 4.	F. 5.	Sat. 6.	M. 8.	Tu. 9.	W. 10.
Adams Express.....	135	134		134	133	
Albany and Susq..						
1st mortgage.....						
2d mortgage.....						
American Express..	93	92	92½			
Burl., C. B. & Nor..	83		82	82		
1st mortgage 58..	100½	101	101	101	101	
Canada Southern ..	68½	68	67½	68	67½	67½
1st mortgage guar	95½	95½	95½	95	96	
Central of N. Jersey	70½	70½	70½	70½	70½	70½
1st mort. 1890....						
78, consol. ass....			109½	109½		
78, convertible ass.	109	109				
78, Income.....						
Adjustment.....	104½		105			
Central Pacific.....	87½	87	86½	87½	87½	87½
68, gold.....	113½	113½	113½		113½	
1st M. (San Joa.)						
1st M. (Cal. & Or.)						
Land grant 68 ..	105½	105½		105½		
Chesapeake & Ohio.		22½				23½
1st pref.....	32½	33½	33			33½
2d pref.....						23½
1st mort., series B	89½	89½	89½	89½	89½	90
Chicago and Alton.	135½	136		135½	136½	136½
Preferred.....						
1st mortgage.....						
Sinking Fund.....						
Chi., Bur. & Quincy	123½	123½	123½	123½	123½	123½
78, Consol. 1903..						
Chi., Mil. & St. Paul	106½	106½	105½	106½	106½	105½
Preferred.....	121		121		121½	
1st mortgage, 88..						
2d mort., 73-108..						
78, gold.....						
1st M. (La. C. div)	120½					120
1st M. I. & M. div.)						
1st M. (I. & D. ext.)			124			
1st M. (H. & D. div.)						
1st M. (C. & M. div.)						
Consolidated S. F.	125	124½	124½			
Chi. & Northwestern	136½	135½	134	134½	133½	133½
Preferred.....	150	151	149½	149	149	147½
1st mortgage.....		108				108½
Sinking Fund 68.			109			
Consolidated 78..			132			
Consol. Gold b'ds			126		125½	
Do. reg.....		125				
Chi., R. Isl. & Pac.	126½	127½	126	126½	126½	124½
68, 1917, c.....	126½	125½	126		125½	
Clev., Col., Cin. & Ind.	82	83½		83	82½	82½
1st mortgage.....						
Clev. & Pittsburg gr.				139½		
78, Consolidated.		127				
4th mortgage.....	110					108
Col., Chi. & Ind. Cent					4½	
1st mortgage.....						
2d mortgage.....						
Del. & Hud Canal.	108½	108½	108½	108½	108½	108½
Reg. 78, 1891....						
Reg. 78, 1884....						
78, 1894.....						
Del., Lack. & Western	127½	127½	127½	127½	127½	127½
2d mortgage 78..						
Consol. 1907....						129
Erie Railway.....						
1st mortgage.....	125½		125			
2d mort. 58, ext..						
3d mortgage.....	102½		102½			
4th mort. 58, ext.						
5th mortgage.....						
78, Consol. gold..						
Great West. 1st mort						
2d mortgage.....	99		99		99½	
Hannibal & St. Jo..						
Preferred.....	78	80	79	80		79
88, Convertible....		107	107			107
Houston & Tex. Cen	75	78			78½	
1st mortgage.....	107½		108	108		
2d mortgage.....						
Illinois Central....	143½	144	143½	144	144½	144½
Lake Shore & Mich So	113½	113½	112½	113½	113½	112½
Consol. 78.....						
Consol. 78, reg..						
2d Consolidated..			121	120½		
Loh. & W. B. con. ass	101½	102½			103½	
Long Dock bonds..						
Louisville & Nash.	54½	54½	54	55½	54½	54½
78, Consol. reg..		115½		116		
Manhattan.....					49	
1st pref.....					85	
Met. Elevated.....		82½	85		85	
1st mortgage.....		96½	96½	96½	97½	93½
Michigan Central.	98½	98½	98	98½	98½	98
78, 1902.....		124½	125			125½
Morris & Essex....	123	123½			124	123½
1st mortgage.....				136½		

2d mortgage.....						
78 of 1871.....	121½				121½	
78, Convertible ..						
78, Consolidated ..			122½			
N. Y. Cen. & Hud. R.	128	127½	125½	126½	126½	126½
68, S. F. 1883....		101½		101½		
68, S. F. 1887....						
1st mortgage.....					131	130½
1st mortgage, reg.						130½
N. Y. Elevated.....						
1st mortgage.....	114		114½		114½	114½
N. Y. & Harlem....						
Preferred.....						
1st mortgage.....						
1st mortgage, reg						
N. Y. Lake Erie & W	40½	40½	39½	40½	40	40½
Preferred.....	82½	83				
2d Consolidated..	97	97½	97½	97	96	97
New 2d 58 fund ..						
N. Y., N. Hav'n & Hart	172					175
North Mo. 1st mort						118½
Northern Pacific..	43½	49½	49½	49½	49½	49½
Preferred.....	85½	85½	85½	85½	86	86
Ohio & Mississippi.	34½				33½	
Preferred.....						
2d mortgage.....						
Consolidated 78..						116
Consol. S. Fund..						
Pacific Mail S. S. Co	42½	43½	43½	41½	42	41½
Pacific R. R. of Mo.						
1st mortgage.....				107½		
2d mortgage.....	111½					
Panama.....						
Phila. & Reading..	54½	55½	55	56	55½	55½
Pitts., Ft. W. & Chi. gtd				136½		
1st mortgage.....						
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car	125	124½			123½	
Quicksil'r Min'g Co						
Preferred.....						
St. Louis & San Fran						
Preferred.....	52½	53				
1st Preferred.....						
St. L., Alt'n & T. H.	48½	51	50½	50½	51	
Preferred.....	90	93	90½	93	94½	
1st mortgage.....						
2d mort. pref.....		110			109½	
Income bonds....			103		105	
St. L., Iron Mt. & S.						
1st mortgage.....						
2d mortgage.....						
Toledo and Wabash.						
1st mortgage.....				108	108½	
2d mortgage.....		100	100			
78, Consolidated..						
St. Louis Division						
Union Pacific.....	104½	103½	103½	103½	103½	103½
1st mortgage.....	113½	113½	113½	113½	113½	113½
Land Grant 78..						
Sinking Fund 88.		118½	118½	118½		
United States Ex...			64		64	
Wabash, St. L. & Pac	35½	34½	34½	35½	35½	35
Preferred.....	55½	54½	54½	54½	54½	54½
New mort. 78..						
Wells-Fargo Ex....	125		126	126		
Western Pacific b'ds						
Western Union Tel.	82½	81½	81	81½	81½	82
78, S. F. conv., 1900			115½	116		

## Boston Stock Exchange.

Closing Prices for the Week Ending Jan. 10.

	Th. 4.	F. 5.	Sat. 6.	M. 8.	Tu. 9.	W. 10.
Atch., Top. & San. Fe.	85½	86	85½	86½	86	86
1st mortgage.....		121				
Land Grant 78..			113½			
Boston & Albany..	174	173½	174			175
Boston and Lowell.		102½		102		102
Boston & Maine....	149½	149½	149	150	150	
Boston & Providence		160½				
Bos'n, Hart. & Erie 78					51½	
Burl. & Mo. R. L. G. 78						
Burl. & Mo. R. in Neb						
68, exempt.....		83	82½		82½	
Chi., Burl. & Quincy	123	124	123½	123½	123½	123½
Cin., Sand & Clev (\$50)						
Concorc (\$50).....						
Connecticut River.						125½
Eastern.....	35½	35½	35½	36½	36½	40
New 68, Bond....	109½	109½	109½			109½

Fitchburg.....	125		121	121	120	
N. Y. & New England	49½	50	50	50½	50½	50
78.....	115½	115½				115½
Northern N. H.....	109		108½	109½		
Norwich & Worcester						
Ogden & Lake Cham						
Old Colony.....	135	136				
Ph., Wil. & Balt. (\$50).						
Portl'd, Saco & Ports						
Pueblo & Ark Val 78	113½		113½			114
Pullman Palace Car		124	124	124		
Union Pacific.....	103½	103½	103½	103½	104	103½
68.....	113½				113½	
Land Grant 78..						
Sinking Fund 88.	115½			115½	116	
Vermont & Mass....						
Worcester & Nashua						
Cambridge (Horse)...		84				
Metropolitan (Horse)					72½	71½
Middlesex (Horse)...	102					
Cal. & Hecla Min'g Co	252			253	253	
Quincy.....	63½	64	63½	63½	63½	63½

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Jan. 9.

	W. 3.	Th. 4.	F. 5.	Sat. 6.	M. 8.	Tu 9.
Allegh'y Val. 73-108						
78, Income.....		48				
Buff., Pitts & West.	17½	18¼		18¼	18¼	18¼
Camd'n & Am. 68, '83						
68, 1889.....		113				
Mort. 68, 1889.....				113		
Camden & Atlantic.						
Preferred.....						
1st mortgage.....						
2d mortgage.....						
Catawissa.....			22½			
Preferred.....	54½	54½	54½	54		
2d pref.....			53			
78, new.....						
Del. & Bound Brook						
78.....						
Elmira & Williams p't						
Preferred.....						
Hunt. & B. Top Mt.			15			15
Preferred.....						
2d mortgage.....						
Lehigh Navigation.	38½	38½	39½	39		39½
68, 1884.....		101½	101½			
Gold Loan.....		109½		110		
Railroad Loan....						
Conv. Gold Loan..		108				
Consol. Mort. 78..						
Lehigh Valley.....	63½	63½	63½	63½	63½	63½
1st mort. 68, coup				120½	120½	
1st mort. 68, reg..						
2d mort. 78.....						
Consol mort. 68..		120	120			120
Consol.mtg.68,reg						
Little Schuylkill...	56½	56½	56½	56½		57
Minehill & Sch. Hav'n		61	61	61		
North Pennsylvania	64	64	64	64½		65
1st mortgage 68..	103	101				
2d mortgage 78..		109				
Genl. mtg. 78, coup						
Genl. mtg. 78, reg						
Northern Central..			55	56		55½
58.....		100	99½		99½	99½
Northern Pacific...	47½		43½	48%	49½	49½
Preferred.....	85		85½	85½	85½	86½
Pennsylvania R. R.	59½	59½	60½	60	60½	60½
1st mortgage.....						
Gen'l mort.....						
Gen'l mort reg..						
Consol. mort. 68.						
Consol. mort. reg				117		
Pa. State ss, new...						
do 48, new.....						
do 3½8, 1912...						
Phila. & Reading...	26%	27½	28	27%	27%	27%
1st mortgage 68..						
78 of 1893.....						
78, new convert..	72		72½	73½	73½	74½
Consol. mort. 78..		122%	122½		123	
Consol. mort. reg.						
Gen'l mort. 68..	92%	92%	92%	92%	92%	92%
Def. Income bonds						
Philadelphia & Erie						
1st mortgage 58..	103½		103½	103½	103½	
2d mortgage 78..			112½	112½	113	
Pittsb., Cin. & St. L. 78				119%	120	
Pitts., Tit. & Buff. 78,				95	95	
Schuylkill Nav't'n.						6
Preferred.....	12½		12			12
68, 1897.....			90			90
68, 1907.....						
United Co. of N. J..	188½	188½	188½		188	
Hestonville, (Horse)	15½					
Chestnut & Walnut)						

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Jan. 9.

W. 3. Th. 4. F. 5. Sat. 6. M. 8. Tu. 9.

Baltimore & Ohio...						
6s, 1885.....						
Central Ohio (\$50)...	51½	51½	52			
1st mortgage.....						
Marietta & Cincin'ti.						
1st mortgage, 7s...	130	129½	129½			
2d mortgage, 7s...	99½	99½			99½	
3d mortgage, 8s...	53½	54	53½		53½	
Northern Cen. (\$50)...	54½					
2d mort. 6s, 1885...						
3d mort. 6s, 1900...						
6s, 1900, gold.....						114½
6s, 1904, gold.....	113				112½	
Pitts. & Connells. 7s.						
Virginia 6s Consol.	61	61½	61½	61	60½	60
Consol. coupons...	58½	58	57	57	56½	56½
10-40 bonds.....	42½	42½	43		43	40
Def'd Certificates						
New 3s.....	47					
Western Maryland...						15
1st M., end. by Balt						
2d M., do.						
3d M., do.						
1st M., unendorsed			110			100
2d M., end. Wash Co						
2d M., preferred...						
City Passenger R. R.						

**London Stock Exchange.**

Closing Prices—

Dec. 15. Dec. 22.

Baltimore and Ohio 5s, 1927.....	105	109	107	109
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	110	112	110	112
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs. 90½	90½	91½	89	90
Do. 1st mort. 6s, 1895-98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds. 117	117	118	118	120
Do. Con. M. sp. c., till '83 after 6p. c. 116	116	118	117	119
Illinois Central \$100 shares.....	149	150	149	150
Do. S. F. 5s, 1903.....	105	107	104	106
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 91	91	93	91	93
Do. capital stock \$100 shares.....	55	56	55	56
N. Y. Cen. & Hud. R. mort. bonds. 130	135	133	135½	
Do. \$100 shares.....	134½	135½	134½	134½
Do. mort. bonds (stg.).....	122	124	122	124
N. Y. Lake Erie & West. \$100 shs. 40	40	40½	40	40½
Do. 6 p. c. pref. \$100 shares.....	87	89	89	91
Do. 1st Con. Mort. bonds (Erie). 128	132	128	132	
Do. do. Funded Coupon bonds. 125	130	125	130	
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. do. Funded Coupon bonds. 97	99	97	99	
N. Y., Pa. & Ohio 1st mort. bonds. 50	51	50½	51½	
Do. Prior Lien bonds (sterling). 100	105	100	105	
Pennsylvania \$50 shares.....	62½	62½	61½	62½
General Mortgage.....	124	126	124	126
Phil. & Erie Gen. mort. 6s, 1920.....	117	119	117	119
Philadelphia & Reading \$50 shs. 27½	27½	27½	28	28½
General Consol Mortgage.....	114	116	115	117
Do. Improvement Mortgage.....	103	105	104	106
Do. Gen. Mtg. '74, ex-def'd coup. 96	98	97	97	99
St. L. Bridge 1st mort. gold bond. 121	123	121	123	
Do. 1st. pref. stock.....	92	96	92	96
S. P'fic of Cal., 1st mort 6s, 1905-6. 106½	107½	106½	107½	
Union Pacific 1st mtg. 6s, 1896-9. 115	117	115	117	
Wabash, St. L. & P. \$100 shares... 34½	35½	35	36	
Do. \$100 pref shares.....	57	58	55½	56½
Do. gen. mort. bonds.....	81	83	81	83

**AMERICAN RAILROAD JOURNAL****Financial and Commercial Review.**

THURSDAY, JANUARY 11, 1883.

RATES for money on call on stock collaterals during the forenoon were 5 per cent, and on Governments 2@3 per cent. In the afternoon the rates were 4@4½ per cent.

The posted rates for foreign exchange were 4.81½@4.82 and 4.85½@4.86. The actual rates were as follows, viz: Sixty-day bills, 4.81 and 4.81½; demand, 4.85 and 4.85½; cables, 4.86 and 4.86½; Commercial bills, 4.79½ and 4.80. Continental exchange was as follows: Francs, 523½ and 520; reichsmarks, 94½ and 95½@¾. Guilders, 39½@¾ and 40.

The Cleveland and Pittsburgh Railroad was leased to the Pennsylvania Railroad Company in December, 1871, for 999 years, and the lease transferred to the Pennsylvania Company in May of the following year, at a rental of 7 per cent of the capital stock, interest on bonds,

sinking fund, and \$10,000 a year for organization. By the terms of the lease the lessees are also to pay dividends on a 43.85 per cent increase in stock at the time. The report of the President, which was presented at the annual meeting of the company, held in Pittsburgh on the 8th inst., showed that the year's receipts were \$1,239,573.72, and the expenditure \$1,746.98 less than the receipts. There also came to the company \$3,320.61 from the Cleveland and Massillon branch. The sinking fund was increased by \$66,650. Twenty-three construction bonds—\$23,000—were added to the account of the sinking fund during the year, and twenty of the same \$1,000 bonds cancelled. The outstanding balance of the public debt now is \$2,491,000 and the betterments during the year \$225,058, and \$225,000 worth of construction and equipment bonds appropriated to pay the cost. A number of provisions were made for past and future steps in the better equipment of the road—purchase of depots, both freight and passenger; building of bridges and other improvements. The year's balance sheet showed the debt of the company to be \$17,539,357.07, and the receipts \$17,302,124.64; the balance, \$237,232.43, being the total liabilities of the company including everything.

The total bonded debt of the State of Maine, less the sinking fund, is \$4,178,715, a decrease of \$186,818. Savings banks show an increase of deposits over 1881 of over \$3,000,000. Under the head of taxation the Governor recommends a tax levy on the telephone companies of the State.

The Camden and Amboy Railroad 6s of 1883 (a loan of \$1,700,000) fall due February 1, and will be paid off. The holders have the option, however, of refunding them into the new 4 per cent forty year gold bonds of the United Companies of New Jersey, which are issued without deduction for taxes, and at the price of 93½. The exchange may be made, or the holders of the 6s will be paid off, until February 1, 1883, at the offices of Drexel, & Co. or W. H. Newbold's Son & Co., Philadelphia, Penn.

In the United States Circuit Court, this city, on the 2d inst., Judge Wheeler rendered a decision in favor of the orators in the action of T. Nichols and others against the New York, Lake Erie and Western Railroad Company and others. He decides that certain preferred stockholders have a right to a dividend out of the profits of the road for 1880, which dividend was not declared by the directors for that year. The court ordered a decree to be entered that "the holders of preferred stock are entitled to dividends at the rate of 6 per cent per annum in every year that the net profits of the year as declared by the board of directors of said company are sufficient to pay the same or as far as the said net profits of the year ending December 30, 1880, may be ascertained and the dividends due to the holders of said preferred stock in respect thereof are directed to be paid."

The report of the United States Treasurer to the Secretary of the Treasury on the sinking fund and funded debt of the District of Columbia shows that there was expended during the year in the purchase of the various bonds of the District \$259,321.20 of which \$39,600 was used in the purchase of 3.65s at par, the other

bonds being bought at an average premium of about 14 per cent; \$44,610 was applied to the interest and sinking fund upon the water-stock bonds, which annual amount will extinguish the debt in October, 1901. There has been redeemed \$681,300 in board of audit certificates, leaving \$31,693.24 to be provided for. The statement of the funded indebtedness of the District up to January 1, 1881, shows that the total debt is \$21,664,750. Amount of funded debt retired since July 1, 1878, \$1,189,250. Reduction in annual interest charge since July 1, 1878, \$69,587.67. The issue of District 3.65s is limited by law to \$15,000,000; there have been issued to date \$14,490,600.

The total tonnage of anthracite coal from all the regions for the week ending Dec. 30, as reported by the several carrying companies, amounted to 502,830 tons, against 585,463 tons in the corresponding week last year, a decrease of 82,633 tons. The total amount of anthracite mined for the year is 29,193,998 tons, against 28,500,183 tons for the same period last year, an increase of 693,815 tons. The quantity of bituminous coal sent to market for the week amounted to 93,485 tons, against 75,118 tons in corresponding week last year, an increase of 18,067 tons. The total amount of bituminous mined for the year is 4,520,802 tons, against 5,149,123 tons for the corresponding period last year, a decrease of 628,321 tons. The total tonnage of all kinds of coal for the week is 596,015 tons, against 660,581 tons in corresponding week last year, a decrease of 64,566 tons, and the total tonnage for the coal year is 33,714,800 tons, against 33,649,306 tons to same date last year, an increase of 65,494 tons. The shipments of bituminous coal from the mines of the Cumberland coal region for the week ending Dec. 30 were 41,368 tons, and for the year to that date 1,512,519 tons, a decrease of 726,565 tons as compared with the corresponding period of last year.

The Governor of Illinois, in his message to the Legislature, estimates the amount necessary to be raised by taxation for State uses for the next two years is \$3,681,000, and for public schools \$2,000,000. The Illinois Central Railroad fund is estimated at \$8,000,000, and the surplus from former levies is to be deducted from this amount. He recommends legislation in the interest of permanent roads, and a constitutional amendment giving the Executive power to veto single items in Appropriation bills.

According to the statement of the Controller, the funded debt of the city of New York on the 1st of January, 1883, less the amount in the Sinking Fund for its redemption, was \$96,141,948, a reduction during 1882 of \$2,159,000. Stocks and bonds were issued during the year, exclusive of revenue bonds, to the amount of \$4,468,000, which sum was added to the debt, making the total expenditures of the city government during the year (including the appropriations by the Board of Apportionment) \$33,880,000. Of the bonds issued over \$3,000,000 were for expenditures by the Public Works Department, making the total sum used by that department for the year 1882 reach nearly \$6,000,000.

The following quotations of sales of railway and other



securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atlantic and Pacific 1st, 94; Atchison, Colorado and Pacific 1st, 93; Boston and New York Air Line pref., 79; Chicago, St. Louis and New Orleans, 80; do. 1st, 116; do. 5s, 103½; Chicago, St. Paul Minn. and Omaha, 52½; do. pref., 111½; do. consol., 108; Central Iowa, 26; do. 1st, 112; Columbus, Chicago and Indiana Central inc., 48; Chicago, Milwaukee and St. Paul, Southern Minn. div. 1st, 106½; do. Chicago and Pacific West div. 1st, 91½; do. Mineral Point div. 1st, 91½; Chicago and Northwestern S. F. 5s, 100½; Chesapeake and Ohio 6s, 191½, 98; do. 1st, Series A, 107; do. cur. 6s, 53½; Chicago, Burlington and Quincy 5s, S. F., 104; do. Denver div. 4s, 84½; do. Iowa div. 5s, 105½; Cleveland and Toledo S. F., 106½; Central Branch Union Pacific 1st, 101; Columbia and Greenville 1st, 97; Denver and Rio Grande, 44½; do. 1st, 107½; do. consol., 89½; Des Moines and Minn. 1st, 121; East Tennessee, Virginia and Georgia, 10; do. pref., 17½; do. 5s, 73; do. inc., 40; Elizabethtown, Lexington and Big Sandy 6s, 94; Evansville and Terre Haute 1st consol., 96½; Fort Worth and Denver, 30½; do. 1st, 67; Gulf, Colorado and Santa Fe, 1st, 108; Houston and Texas Central 1st, Western div., 105; Indiana, Bloomington and Western, 33½; do. consol. inc., 43; International and Gt. Northern 1st, 105½; do. 6s, coupon 85½; Indianapolis, Decatur and Springfield 1st, 102½; Kansas Pacific 1st consol., 100; do. 6s, Denver div. ass., 107½; Keokuk and Des Moines 1st, 104; Lafayette, Bloomington and Muncie 1st, 98; Louisville, New Albany and Chicago, 65; do. 1st, 102; Long Island, 61; do. consol. 5s, 97½; Lake Erie and Western, 31; do. 1st, 101; Louisville and Nashville genl. mort. 6s, 93; Metropolitan Elevated 2d, 88; Michigan Central 5s, 100; Manhattan Beach, 19; Minneapolis and St. Louis 28; do. pref., 64; do. 1st, 118½; do. Southwestern ext. 1st, 110½; do. Pacific ext. 1st, 101½; do. Iowa ext. 1st, 111½; Mobile and Ohio, 18½; do. 1st debent., 83; do. 2d debent., 48½; do. 3d debent., 38; do. 4th debent., 32; Missouri Kansas and Texas, 33½; do. consol. 7s, 108½; Missouri Pacific, 103½; do. 1st, 100½; do. 3d, 109½; Memphis and Charleston, 52½; Milwaukee, Lake Shore and Western pref., 48½; do. 1st, 98½; New York, Chicago and St. Louis, 14½; do. pref., 32½; do. 1st, 97½; Nashville, Chattanooga and St. Louis, 60½; New York, Ontario and Western, 26½; Norfolk and Western, 18; do. pref., 48½; do. genl. mort., 100½; New Orleans Pacific 1st, 87½; Northern Pacific 1st, 102½; Oregon Short Line 6s, 100; Oregon and California 1st, 88½; Oregon Railway and Nav., 139½; do. 1st, 106½; Oregon Transcontinental, 85½; Ohio Central, 13½; do. 1st, 92½; do. inc., 32; Ohio Southern, 13; do. inc., 26½; do. 1st, 81; Peoria, Decatur and Evansville, 27; do. 1st, 100½; Rochester and Pittsburgh, 21½; do. inc., 45; do. 1st, 103½; Rome, Watertown and Ogdensburg, 32½; do. inc., 44; do. ext. 5s, 73; Richmond and Danville, 52; do. debent., 61; do. 1st, 96½; Richmond, Danville and West Point, 24; Pennsylvania Co. 4½s, 95; Rensselaer and Saratoga, 141; Richmond and Alleghany, 14½; do. 1st, 77; St. Louis, Kansas City and Northern, Omaha div. 1st, 108½; St. Paul and Duluth, 40½; do. pref., 96½; St. Paul and Sioux City 1st, 113; St. Paul, Minn. and Man., 142½; do. 1st, 108; do. 2d, 108½; do. Dakota ext. 1st, 106½; South Carolina, 25; do. inc., 60; do. 1st, 101; St. Louis, Alton and Terre Haute dividend bonds 62½; Southern Pacific of Cal. 1st, 103; South Pacific of Mo. 1st, 103; St. Louis and San Francisco 2d, class B, 92½; do. C, 92½; St. Louis and Iron Mt., 5s, 75½; do. 1st pref. inc., 110; do. Cairo and Fulton 1st, 107½; do. Arkansas Branch 1st, 109; Texas and Pacific, 40; do. consol. 6s, 93; do. inc. L. G., 58; do. Rio Grande div. 1st, 84½; Union Pacific col. trust., 103½; Wabash, St. Louis and Pacific genl. mort. 6s, 80; do. Chicago div. 1st, 81½; do. Toledo, Peoria and Western 1st, 107; Winona and St. Peter 2d, 121; Arkansas 7s, L. R. P. B. & N. O., 37; do. Central, 21; do. M., O. & R. R., 36; do. L. R. & Ft. S., 38; do. Chatham, 18; do. M. & L. R., 49½; Alabama, Class A, 85; Louisiana consol., 72½; Missouri 6s, 1889-90, 114½; do. 6s, 1887, 107½; North Carolina Special Tax 3d class, 8; South Carolina 6s, non-fund., 6; Tennessee 6s, 45; do. compromise, 44; Mutual Union Tel., 23; do. 6s, 73½; Colorado Coal and Iron, 28½; do. 6s, 83; Consolidation Coal, 27½; New Central Coal, 14; Homestake Mining, 18; Ontario, 35½; Standard, 6½.

**Boston.**—Atchison, Topeka and Santa Fe plain 5s, 85; Atchison 4½s, 81½; Atlantic and Pacific inc., 18½; Burlington and Missouri River in Neb. 6s, non-ex-

empt, 103; Boston, Clinton, Fitchburg and New Bedford 56; Boston and Albany 7s, 123; Boston Water Power, 2½; Central Iowa, 24; Columbus, Springfield and Cincinnati, 9; Chicago, Burlington and Quincy 4s, 84½; do. 7s, 126; Connecticut and Passumpsic Rivers, 91; do. 7s, 116; Cheshire pref., 60; Cedar Rapids and Missouri River, 107; Chicago, Milwaukee and St. Paul, Dubuque div. 6s, 102½; Flint and Pere Marquette, 23½; do. pref., 99; Iowa Falls and Sioux City, 89; Kansas City, Fort Scott and Gulf pref., 120; do. 7s, 111½; Kansas City, St. Joseph and Council Bluffs 7s, 113½; Leavenworth, Topeka and Southwestern 4s, 75; Little Rock and Ft. Smith, 40; do. 7s, 105; Maine Central, 80; Massachusetts Central, 3; do. 6s, 26; Mexican Central, 21; do. 7s, 74½; do. inc., 21½; Marquette, Houghton and Ontonagon, 78; do. pref., 118; Middlesex Central, 102½; New Mexico and Southern Pacific 7s, 113½; New York and New England 6s, 104½; Portsmouth, Gt. Falls and Conway, 25; do. 4½s, 86; Southern Kansas and Western 7s, 109½; Sonora 7s, 104½; Toledo, Delphos and Burlington, Branch inc., 10½; do. Southeast div. 6s, 48; Toledo, Cincinnati and St. Louis, 5½; Wisconsin Central, 15½; Atlantic Mining, 17; Brunswick Antimony, 14; Franklin, 15½; Huron, 2; National, 1½; Napa Quicksilver, 3½; Osceola, 33; Pawabic, 10½; Sullivan, 1.

**Philadelphia.**—Alleghany Valley Income scrip, 47; Central Transp., 34; Cincinnati city 7.30s, 130; Harrisburg and Lancaster, 71; do. 6s, 100½; Huntingdon and Broad Top Mt. consol. mort. 5s, 90; Nesquehoning Valley, 53; Philadelphia, Wilmington and Baltimore 4s, 93½; Perkiomen 6s, 103; Philadelphia City 4s, 1903, 113½; do. 6s, 1886, 108½; Pennsylvania R. R. scrip, 119½; Pennsylvania Co. 6s, 107; Philadelphia and Reading debent. 6s, 62; do. scrip, 102½; Pennsylvania and New York Canal 7s, 1896, 121; Pennsylvania Canal 6s, 87; Schuylkill Nav. B. L. 7s, 65; St. Paul and Duluth, 40½; Susquehanna Canal, 5; do. 6s, 60; Union and Titusville 7s, 92½; West Jersey R. R., 49; West Jersey and Atlantic 6s, 108. The latest quotations are: City 6s, 108@120; do. free of tax, 127@134; do. 4s, new, 108@114; Pennsylvania State 5s, new loan, 116@118; do. 4s, old, 110@112; do. 4s, new, 113@116; Philadelphia and Reading Railroad, 27½@27¾; do. consol. mort. 7s, reg., 123@124; do. genl. mort. 6s, coupon, 92@93; do. 7s, 1893, 118½@120; do. 7s, new conv., 74@75; United New Jersey R. R. and Canal, 187½@188; Buffalo, Pittsburg and Western, 18@18½; Pittsburgh, Titusville and Buffalo 7s, 94@95½; Camden and Amboy mort. 6s, 1889, 112½@113½; Pennsylvania R. R., 60½@60¾; do. general mort. 6s, coupon, 121½; @122½; do. reg., 124@125; do. consol. mort. 6s, reg., 116@118; Little Schuylkill R. R., 56½@57½; Schuylkill Navigation pref., 12@12½; do. 6s, 1882, 89½@90½; Elmira and Williamsport pref., 50@60; do. 5s, 99@100; Lehigh Coal and Navigation, 39@39½; do. 6s, 1884, 101@103; do. R. R. loan, 115½@116; do. Gold Loan, 110@111; do. consol. 7s, reg., 115½@117; Northern Pacific, 49@49½; do. pref., 85½@86; North Pennsylvania, 64½@65½; do. 6s, 103@104; do. 7s, 119½@—; do. 7s, General mort. reg., 124@—; Philadelphia and Erie, 19½@20; do. 7s, 112½@113½; do. 5s, 103@104; Minehill, 61@61½; Catawissa, 22@23; do. pref., 54@55; do. new pref., 52½@53; do. 7s, 1900, 121@123; Lehigh Valley, 63@63½; do. 6s, coupon, 120@121; do. reg., 120@121; do. 7s, reg., 133½@134; do. consol. mort. reg., 119@120; Fifth and Sixth streets (horse), 175@200; Second and Third, 114@116; Thirteenth and Fifteenth, 74@76; Spruce and Pine, 44@—; Green and Coates, 80@88; Chestnut and Walnut, —@92; Germantown, 70@75; Union, 110@—; West Philadelphia, 130@—; People's, 7¼@7½; Continental, 100@103.

**Baltimore.**—Atlanta and Charlotte, 1st, 103½; Atlantic Coal, 1.00; Baltimore City 6s, 1890, 113½; do. 6s, 1886, 106; do. 6s, 1893, 115; do. 5s, 1916, 121½; do. 5s, 1903, 118; do. 5s, 1894, 112½; do. 4s, 1925, 110½; Columbia and Greenville 1st, 99½; Canton Co. 6s, 108; George's Creek Coal, 91½; Maryland Defense 6s, 101½; do. 6s, 1890, 107½; North Carolina consol. 4s, 79; Northern Central 5s, Series A, 99½; Ohio and Mississippi; Springfield div. 6s, 115½; Richmond and Danville gold 6s, 95; Shenandoah Valley 6s, 95½; Virginia Midland 5th mort., 94; Virginia 10-40 coupons, 57; Western of Alabama 8s, 114½; Wilmington, Columbia and Augusta, 90. The latest quotations are: Atlanta and Charlotte 1st, 103½@104; Baltimore and Ohio, 200@—; Baltimore City 6s, 1886, 105½@106; do. 6s, 1890, 113½@113¾; do. 6s, 1902, 125@—; do. 5s, 1894, 112½@113; do. 5s, 1916, 121@122; do. 4s, 1920, —@109; do. 4s, 1925, —@111; Columbia and Greenville 1st, 1916, 99½@100; Canton 6s, gold, 107½

@108; Marietta and Cincinnati 7s, 1891, 129½@130; do. 7s, 1896, 99@99½; do. 8s, 1890, 53½@53¾; Northern Central, —@55; do. 6s, 1885, 102½@104; do. 6s, 1900, gold, 114½@—; do. 6s, 1904, gold, 113½@—; do. 5s, Series A, 99½@100; Ohio and Mississippi, Springfield div. 115@115½; Richmond and Danville gold 6s, 95@96; Virginia Midland 5th mort., 93½@94; do. inc., 48@53; Virginia consol., 55@55½; do. 10-40s, 39@42.

A DRIVER of a Boston street car is a sort of Mark Tapley who can see some elements of fun even in a balky horse. This is the way he describes a very common street car experience: "After the balky horse has stopped ten or fifteen times on the route he fairly gets his mad up and declares he won't go any further. Well, the conductor rings the bell and only one horse starts, and we don't go worth a cent. So I've nothing to do but to lick the balky horse. And the lady inside next the window takes her tongue away from the ruff of her mouth with a noise like an infant torpedo, and says: 'Jest see how that man is beating those horses.' And the old lady next to her says: 'I know it. Did you ever see anything like it! I shouldn't think they'd let him.' Then somebody else says: 'I'd like to know what's the matter now? This is about the tenth time we've stopped since we left the bridge. I don't see why we can't get along without so many stops.' Then somebody yanks open the door and calls out: 'Say, driver, what's the matter? Why can't we go on?' Somebody on the platform says: 'Horse bocky!' 'Horse bocky' says the other. 'Well, that aint no way to manage a bocky horse. Why don't somebody get out and lead him? I don't see any reason why a whole carful of people should be kept waiting in the middle of the street just because the driver don't know his business.' Then finally the horse gets to waltzing. That always frightens the women. They holler and most of the passengers stand up in the car to see what's going on, and the horse makes up his mind all of a sudden to go on, and the way them people go down does me more good than all the rest of it. And so it goes on. No fun driving a horse-car? Well, I suppose there aint to a man who hasn't got it in him."

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THE LAKE SHORE AND  
MICHIGAN SOUTHERN RAILWAY CO.,  
TREASURER'S OFFICE,  
GRAND CENTRAL DEPOT,  
NEW YORK, Dec. 22, 1882.

THE BOARD OF DIRECTORS OF THIS COMPANY have this day declared a quarterly dividend of TWO PER CENT upon its capital stock, payable on THURSDAY, the FIRST day of FEBRUARY next, at this office.

The transfer books will be closed at 3 o'clock p. m. on FRIDAY, the 29th inst., and will be reopened on the morning of Monday the 5th day of February next.

F. W. VANDERBILT, Acting Treasurer.

OFFICE CENTRAL PACIFIC RAILROAD COMPANY,  
SAN FRANCISCO, Jan. 5, 1883.

THREE DOLLARS PER SHARE WILL be paid on presentation of dividend warrant No. 15 on or after Feb. 1, at this office, or at the office of the company, No. 23 Broad-st., New York. Transfer books will be closed from 7 P. M., Jan. 15, to 10 A. M., Feb. 3. By order of the Board of Directors.

E. H. MILLER, Jr., Secretary.

NOTICE.—THE ANNUAL MEETING OF THE STOCK-HOLDERS OF THE AMERICAN RAILROAD JOURNAL CO. will be held on Wednesday, January 24, 1883, at 2 o'clock P. M., at the office of the Company, 284 Pearl street, New York, for the purpose of electing Trustees.

C. T. VALENTINE, Secretary.

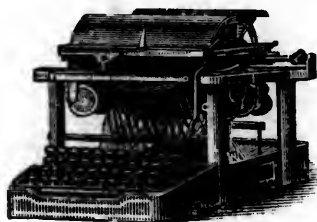
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*Secretary.*

**LUCIUS FAIRCHILD,**

*President.*

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## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Feo.100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S.100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Apr. '82 3 1/2
Atlanta and W. Point.100	1,232,200	semi-an	Jan. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil.pref.100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	June '81 3 1/2	Louisville & Nashv.100	19,130,913	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt.M*100	225,000	semi-an	July '81 3	Lowell & Andover.....100	500,000	semi-an.	Jan. '82 3 1/2	Wilming'tn & Weld'n.100	1,456,200	semi-an.	July '82 3
Baltimore and Ohio.....100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Oct. '81 2 1/2	Will., Col., & Aug.....100	960,000	semi-an.	Jan. '83 3
" pref.100	5,000,000	semi-an	Jan. '83 3	Manchester & Law.....100	1,000,000	semi-an.	Nov. '82 5	Winchester & Poto*c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manhattan.....100	13,000,000	.....	.....	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	" 1st pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	" 2nd pref.100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos. & N.Y. Air Line pf.100	2,795,227	q'arterly	June '82 1	Marietta & Cincinnati 50	1,386,350	.....	.....				
Bos., Cl., F. & N.B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	" 1st pref 50	8,105,600	semi-an.	Sep. '66 38				
Bos., Conc. & Mont. pf.100	800,000	semi-an	Nov. '82 3	" 2d pref 50	4,440,000	semi-an.	Sep. '66 38				
Boston and Lowell.....500	3,940,000	semi-an	Jan. '83 2 1/2	Marq. Hout. & Ont. pf.100	2,259,026	.....	Aug. '82 4				
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Massawippi*.....100	400,000	semi-an.	Aug. '82 3				
Boston & Providence.....100	4,000,000	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2				
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Michigan Central.....100	18,738,204	.....	Feb. '83 2				
Bos., Revere & Lynn.....100	419,400	semi-an	Jan. '83 3	Middlesex Central.....100	280,000	semi-an.	Aug. '82 3				
Buffalo, N. Y. & Erie*100	950,000	semi-an	Dec. '82 3	Mill Creek & Minehill* 50	323,000	semi-an.	July '82 5				
Buff., Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2				
Camden & Atlantic..... 50	377,400	q'arterly	Nov. '82 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2				
" pref. 50	880,650	q'arterly	Nov. '82 4	Mobile & Montgomery100	3,022,517	semi-an.	Feb. '80 2 1/2				
Camden & Burl. Co.100	381,925	semi-an	July '82 3	Morris and Essex..... 50	15,000,000	semi-an.	Jan. '83 3 1/2				
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Mt Carbon & P. Carbon 50	282,350	semi-an.	July '82 6				
Cape May & Millville* 50	447,000	semi-an	June '81 3	Nashua and Lowell.....100	800,000	semi-an.	Nov. '82 4				
Catawissa*.....100	1,159,500	annual	Oct. '82 2 1/2	Nashua & Rochester.....100	1,305,800	semi-an.	Oct. '82 1 1/2				
" pref..... 20	2,000,000	semi-an	Nov. '82 3 1/2	Nashv. & Decatur.....100	1,827,000	semi-an.	June '81 3				
" new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,730,325	semi-an.	Apr. '82 1 1/2				
Cayuga and Susq.*..... 50	589,110	semi-an	July '81 4 1/2	Naugatuck.....100	2,000,000	semi-an.	July '82 5				
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Nov. '82 1 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sep. '82 3				
" pref.100	769,600	semi-an	Aug. '82 3 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Oct. '81 1				
Central of Georgia.....100	7,500,000	semi-an	June '82 4	New London North'n*100	1,500,000	q'arterly	Oct. '82 1 1/2				
Central of New Jersey.....100	18,563,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R.100	89,428,330	q'arterly	Jan. '83 2				
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	N. Y. and Harlem.....100	7,950,000	q'arterly	Jan. '83 4				
" pref..... 50	411,550	semi-an	Jan. '83 3	" pref.100	1,500,000	q'arterly	Jan. '83 4				
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	" City Line.....	.....	annual	Apr. '82 3				
Cheshire preferred.....100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West.100	77,087,600	.....	.....				
Chicago and Alton.....100	11,811,741	semi-an	Sept. '82 4	" pref.100	77,087,600	annual.	Jan. '83 6				
" pref 100	2,245,400	semi-an	Sept. '82 4	N. Y., N. H. & Hart.....100	15,500,000	semi-an.	Jan. '83 5				
Chi., Burl. & Quincy.....100	69,508,105	q'arterly	Dec. '82 2	N. Y., Prov. & Boston.....100	3,000,000	q'arterly	Nov. '82 2				
Chi., Iowa & Nebras*100	3,916,200	semi-an	Jan. '83 4	Niag. Bridge & Canad*100	1,000,000	semi-an.	July '81 3				
Chi., Mil. & St. Paul.....100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Sep. '81 3				
" pref 100	14,401,483	semi-an	Oct. '82 3 1/2	" pref.100	1,000,000	semi-an.	Sep. '81 3				
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3	N. Eastern (S. C.) pref.100	86,000	semi-an.	May '81 4				
" pref.100	21,525,353	q'arterly	Dec. '82 2	Norfolk & Western pref.100	15,000,000	q'arterly	Dec. '82 1				
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	North Pennsylvania..... 50	4,527,150	q'arterly	Nov. '82 1 1/2				
Chi. and West Mich.....100	6,151,000	semi-an	Feb. '82 2 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4				
Chi., St. P., M. & O. pref.100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern N. Hampsh.100	3,068,400	semi-an.	Dec. '83 3				
Cin., Ham. & Dayton.....100	3,500,000	semi-an	Jan. '83 3	Northern Pacific pref.100	42,312,589	.....	Jan. '83 11.1				
C. Ind., St. L. & Chi.....100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5				
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Oregon & Transcont'l.100	40,000,000	q'arterly	Jan. '83 1 1/2				
Clev., Col., Cin. & Ind.100	14,991,800	.....	Feb. '83 2	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2				
Clev. and Pittsburgh* 50	11,244,336	q'arterly	Dec. '82 1 1/2	Oregon R'way & Nav.....100	6,000,000	q'arterly	Nov. '82 2				
Columbus & Xenia*..... 50	1,786,200	q'arterly	Dec. '82 2	Oswego & Syracuse.....100	1,320,400	semi-an.	Aug. '81 4 1/2				
Col., Hock. Val. & Tol.100	10,316,500	semi-an	Jan. '83 2 1/2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2				
Concord.....100	1,500,000	semi-an	Nov. '82 5	Paterson & Hudson*100	630,000	semi-an.	July '82 4				
Concord and Ports*100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Ramapo.....100	248,000	semi-an.	July '82 4				
Conn. & Passump. Riv.100	2,244,400	semi-an	Aug. '82 3	Pember. & Hightst'n* 50	342,150	semi-an.	Jan. '82 3				
Connecticut River.....100	2,100,000	semi-an	Jan. '83 4	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2				
Cumberland Valley..... 50	1,292,950	q'arterly	Oct. '82 2 1/2	Pennsylvania Co..... 50	20,000,000	annual	Dec. '82 4				
" 1st pref 50	241,900	semi-an	Oct. '82 4	Peoria & Bureau Val*100	1,200,000	semi-an.	Aug. '82 4				
" 2d pref. 50	243,000	semi-an	Oct. '82 4	Philadelphia & Erie* 50	7,013,700	semi-an.	.....				
Danbury & Norwalk..... 50	600,000	.....	Oct. '82 2 1/2	" pfd 50	2,400,000	semi-an.	Jan. '75 4				
Dayton and Mich.*..... 50	2,402,573	semi-an	Apr. '82 1 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Dec. '82 3				
" pref. 50	1,211,250	q'arterly	July '82 2	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2				
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	" pref. 50	1,551,800	q'arterly	July '76 3 1/2				
Del. & Bound Brook*100	1,652,000	q'arterly	Nov. '82 1 1/2	Phila. and Trenton.....100	1,259,100	q'arterly	Jan. '83 2 1/2				
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4				
Denver & Rio Grande.....100	29,160,000	q'arterly	Jan. '82 1 1/2	Pittsb., Ft. W. & Chi.*100	19,714,285	q'arterly	Jan. '83 1 1/2				
Detroit, Lans. & Nor.100	1,825,600	semi-an	Aug. '80 2 1/2	" Special Imp.100	6,770,900	q'arterly	Jan. '83 1 1/2				
" pref.100	2,503,380	semi-an	Aug. '82 3 1/2	Pittsfield & N. Adams.....100	450,000	semi-an.	Jan. '83 2 1/2				
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Portl., Saco & Portsmouth100	1,500,000	semi-an.	Jan. '83 3				
East Pennsylvania*..... 50	1,709,550	semi-an	Jan. '83 3	Providence & Worcester100	2,000,000	semi-an.	Jan. '83 3				
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Rensselaer & Saratog.*100	7,000,000	semi-an.	July '82 4				
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Danv.....100	5,000,000	q'arterly	Aug. '82 2				
Eel River.....100	3,000,000	q'arterly	Dec. '82 1	Richmond & Petersb.100	1,009,300	semi-an.	Aug. '82 2				
Elmira & Williams*100	500,000	semi-an	Nov. '82 1 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '82 3				
" pref. 50	500,000	semi-an	July '82 3 1/2	Rome Water & Ogdens*100	5,293,900	.....	Jan. '83 3				
Erie and Pittsburgh*..... 50	1,098,400	q'arterly	Dec. '82 1 1/2	Rutland preferred..... 100	4,000,000	semi-an.	Sept. '82 1				
Evanville & Terre H.100	1,000,000	semi-an	Jan. '83 6b	St. L., Alt. & T. Haute.....100	2,300,000	.....	.....				
Fitchburg.....100	4,500,000	semi-an	Jan. '83 3	" pref.100	2,468,406	.....	Dec. '82 4				
F. & P. Marquette pf.100	6,500,000	semi-an	Jan. '83 3 1/2	St. L. & S. Fran. 1st pref.100	4,500,000	semi-an.	Feb. '83 3 1/2				
Ft. W. & Jackson pref.100	2,000,000	.....	May '82 2	St. L., I. Mt. & South'n.100	21,459,921	semi-an.	Feb. '74 3				
Georgia.....100	4,200,000	q'arterly	July '82 2 1/2	St. L., Jac'ville & Chic.100	1,293,000	.....	Aug. '82 4 1/2				
Granite.....100	1,250,000	semi-an	Jan. '83 2	" pref.100	1,034,000	.....	Aug. '82 4 1/2				
Greenwh' & Johnsonv.100	118,000	semi-an	Jan. '83 4	St. P. & Duluth pref.100	4,705,000	semi-an.	Jan. '83 3 1/2				
Han. & St. Jo. pref. 100	5,083,024	semi-an	Aug. '82 3 1/2	St. P., Minn. & Man.100	20,000,000	q'arterly	Nov. '82 2				
Harrisbg. & Lancaster 50	1,182,500	semi-an	July '82 3 1/2	Schuylkill Valley*..... 50	576,050	semi-an.	July '82 2 1/2				
H'ford & Conn. West'n.100	.....	.....	Nov. '82 1 1/2	Seaboard & Roanoke.....100	1,229,600	semi-an.	Nov. '82 5				
Housatonic pref. 100	1,180,000	q'arterly	Jan. '83 2	Shamokin V. & Pottav 50	669,450	semi-an.	Feb. '83 2				
Illinois Central.....100	39,000,000	semi-an	Sept. '82 3 1/2	Shore Line*.....100	1,000,000	semi-an.	July '82 4				
Ia. Falls & Sioux City*100	4,623,500	q'arterly	Dec. '82 1 1/2	Sioux C. & Pacific pref.100	169,000	semi-an.	Oct. '82 3 1/2				
Iowa R. Land Co. pref. 50	7,620,000	q'arterly	Nov. '82 1	South Br. (N. J.)*.....100	438,300	semi-an.	Jan. '82 3				
Jeffersonv. Mad. & Ind.100	2,000,000	q'arterly	May '82 1 1/2	South Western (Ga.)*100	3,892,300	semi-an.	Dec. '82 3 1/2				
Joliet and Chicago*.....100	1,500,000	q'arterly	June '82 1 1/2	Stockbridge & Pitts.* 50	448,700	q'arterly	Jan. '82 1 1/2				
Ka. n. C., Ft. S. & Gulf.100	4,000,000	.....	Feb. '82 2	Syr., Bingham & N. Y.*100	2,500,000	semi-an.	Aug. '82 2				

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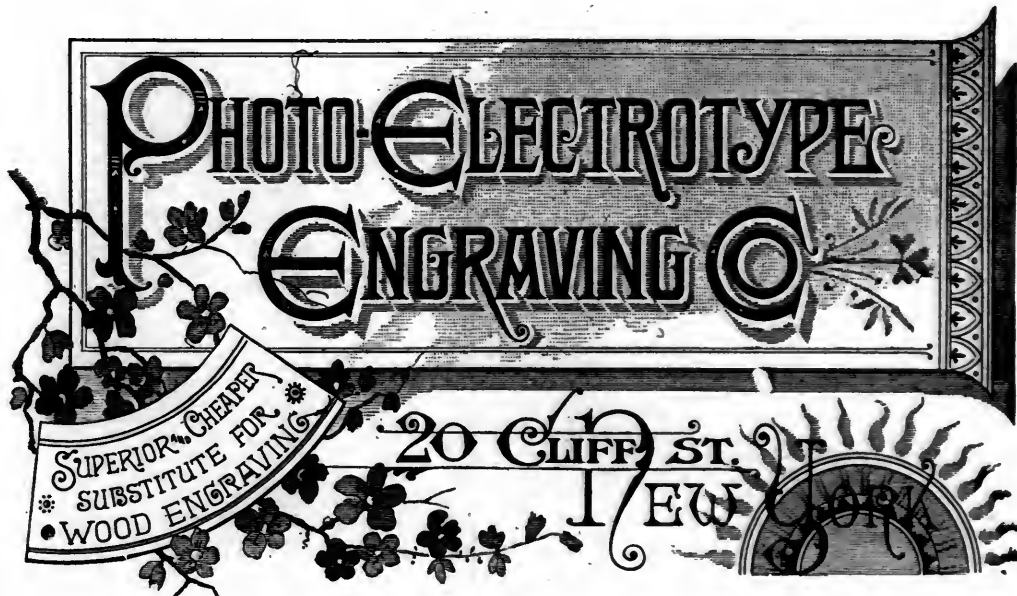
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## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	.....	.....
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,020,000	2,277,000	2,474,000	2,409,000	2,242,000	.....	.....
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,393	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,022	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,511	774,790	771,844	672,380	635,307	7,553,988
1882.....	570,447	530,480	584,483	561,787	553,412	613,886	671,337	800,624	881,109	812,032	748,151	.....	.....
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,609,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,699,755	2,497,053	2,532,100	2,069,287	.....	.....
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,034,821	1,307,948	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,461	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,566,706	1,678,361	1,644,676	1,591,052	1,560,597	1,855,000	17,025,462
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,029	392,921	391,950	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	221,320	211,014	192,623	2,296,916
1882.....	200,042	186,879	202,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	.....	.....
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	643,417	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	138,284	154,717	168,798	148,913	154,917	155,030	184,347	258,628	239,196	238,442	249,252	.....	.....
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	602,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	728,173	689,387	697,371	674,603	674,749	674,746	752,251	813,600	828,238	865,325	752,144	.....	.....
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	203,677	200,064	199,846	190,125	272,114	247,232	225,678	200,450	156,697	.....
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	.....	.....
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	847,959	805,124	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,005,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,107,985	1,216,215	1,192,390	.....	.....
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,812	2,403,224
1882.....	150,676	158,590	148,166	141,957	134,378	135,184	136,398	140,443	160,031	265,201	295,110	307,643	.....
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	150,439	150,439	168,317	179,979	172,121	152,059	173,127	2,075,256
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	.....	.....
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	237,729	2,809,255
1882.....	213,840	217,261	265,222	263,544	283,244	290,060	300,920	353,726	338,490	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,076	1,606,874	1,786,417	1,809,010	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	.....	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	449,565	449,664	479,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	503,683	667,488	592,435	550,223	526,685	.....	.....
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,984	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	434,331	4,044,576
1882.....	239,800	269,000	384,000	438,000	568,332	631,342	679,240	727,377	789,700	834,460	761,324	.....	.....
<b>PHILADELPHIA AND ERIE:</b>													
1880.....	224,307	245,372	327,678	334,947	311,470	331							

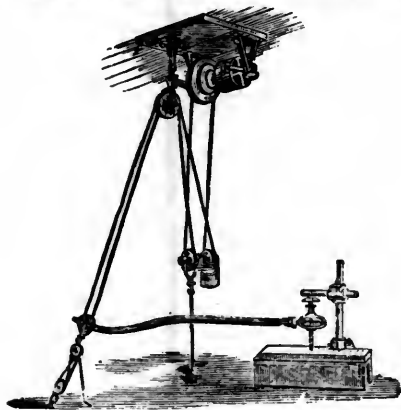
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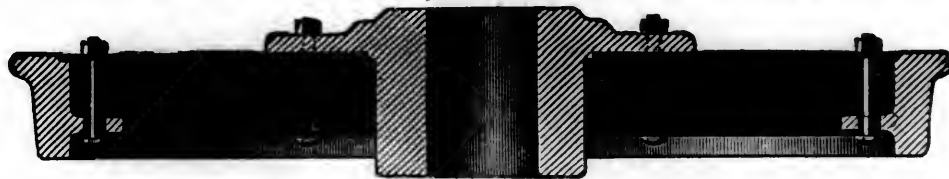
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## ALLEN PAPER CAR WHEEL COMPANY, GENERAL OFFICES: 240 BROADWAY, NEW YORK.



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**=PAPER CAR WHEELS,=**  
(ALL SIZES).

Especially adapted for Sleeping and Drawing Room Cars, Locomotive and Tender Trucks, Steel Tire, with annular web—strongest, most durable and economical wheel in use. Works at Hudson, N. Y.; and at Pullman (near Chicago) and Morris, Ill.

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"The McLeod Air Signal is an ingenious and inexpensive device by which the coming of a train is announced far in advance, both by visible and audible signals." [Mass. R. R. Com. Report.]

This signal has been fully tested on the New York and New England Railroad at Dudley and Bird Streets, by practical operation, and has proved a complete success, to the entire satisfaction of the many prominent Railroad men and experts who have watched and examined it. It provides an Automatic Block, Crossing, Station, Switch, Bridge, Yard and Curve Signals, Gate and Revolving Lanterns. Being operated by the weight of trains passing over an incline bar, forcing common air through a tube, by means of a bellows, which is positive in its action, it is highly commended by all railroad officials who examined it.

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4 Pemberton Square, Boston, Mass.

New York Office with Col. Thos. R. Sharp, 115 Broadway



### Training Car Conductors.

GETTING AN INSIGHT OF THE DIFFICULTIES OF THE MEN ON THE REAR PLATFORMS.

"TO BECOME a surface street car conductor acceptable to both the public and the railroad company's officials, is not by any means so easy a transformation from any other business life as most persons suppose," a conductor old in the service said. "In the first place you've got to undergo a rigid examination of your knowledge of the streets across which your car is to pass. This is required in order that the officials may be certain before they take a new man that he is worth their attention. It is assumed that he can tell at once about what the distance is, for instance, between Canal street and Fourteenth street on up-town lines, or from Broadway to Sixth avenue on cross-town lines, or between any two important points on the road. This is required in order that the conductor may be able to know how long a time will be required to go from one point to another, and this again is necessary in order that the conductor may know not only when he is behind or ahead of time at a given point, but also whether he is going to be ahead or behind time at a point beyond. Besides, a close knowledge of the streets and the order in which they come is necessary in order that the conductor may know when to announce a street where some passenger has ordered him to stop the car. You know the names of the streets are not always on the corner gas lamps as they should be.

"This part of the examination of applicants is a recent invention. Nor was I required, when I first put my foot on a car platform, to go through a course of a week's training on a brother conductor's car before I was allowed to run a car of my own. This is the custom now, unless, of course, it is evident that the new man has talent enough to learn the business in a quicker time. It was a week before I learned the names of the streets and the order in which they came, but at the end of that week I could name every cross street from one end of the line to the other, backward or forward, as fast as I could make my tongue fly. It was a week of worry while I was learning, though, for often I hadn't the remotest notion when I was coming to a street at which a lady had told me to stop the car. I would keep a straight face when she came to the door, with red cheeks and flashing eyes, and demanded the reason why I had not stopped at 'her street,' and I answered that I had forgotten, for that would lead all the passengers and any spotter on the car to suppose that I was a regular old-time conductor. See?

"But even after the streets are familiar I find it difficult to keep track of myself at night, especially if it is foggy or if it rains, or even if it is very dark. When a car is crowded on a very wet night and I am inside collecting fares, the only way to keep track of my position is to duck down and peep out of the windows while I watch for certain landmarks which I have observed. Sometimes it is a white house, or a residence standing alone in its yard, or a queer old tree, or a vine clambering on a house front,

or a series of vacant building lots, or a big gilt sign, or a curve in the railroad track. After experience the new conductor can tell you where he is at any time without looking at anything outside of the car, and I have been told by some conductors that they could shut their eyes, ride a mile, and tell you to a car's length to what street they had come.

"The conductor must learn to observe the city ordinance requiring cars to be stopped on the furthest crossing, because by doing so the cross street is left clear for travel. Another thing to be learned is the method of using the indicators, which must be rung when a fare is collected. There is one at each end of the car, and the one at the forward end is the one to be rung. I mention that fact because a green conductor I had with me a few weeks ago spent a week with me, and you could not imagine that a human being could be so stupid. He tried to run one trip alone, and he succeeded in ringing the wrong indicator repeatedly, in ringing the indicator when he intended to ring the bell to stop the car, in stopping the car at the wrong crossings for passengers to get out, and in fact blundering at every step. It was his first and his last trip."

"What is the most difficult thing to learn?"

"To run the car on time—neither too fast nor too slow."

The reporter was about to jump from the car, and he ventured to remark: "You haven't told how you learned to collect and take care of the fares."

"I'm not giving everything away." Then, with a suspicious look at the reporter, "You are not a spotter, are you?"

The reporter jumped.—*Sun.*

### INCORPORATION.

A CERTIFICATE of incorporation was filed at Albany, N. Y., on the 8th inst. of the Syracuse, Phoenix and Ontario Railroad Company, with a capital of \$750,000. This road is to connect with the Syracuse, Chenango and New York Railroad at Syracuse, and its terminus will be at Oswego, a distance of forty miles.

THE charter of the Marshall and Northwestern Railway—narrow-gauge, ten miles of which are graded—has been amended so as to enable it to run from a point on said road from Marshall to Pittsburg, Texas; fifteen miles from Marshall to Jefferson; from thence to the State line, with a view to connect with the Texas and St. Louis Railroad at Magnolia; also to run from Marshall in a southeastern direction to the State line, north of Sabine river, with a view of building to Lake Charles, to connect with the Louisiana and Western Railroad.

THE State Department at Harrisburg, Penn., issued on the 9th inst. a charter to the Philadelphia, Germantown and Chestnut Hill Railroad Company, the line of which runs from a point on the Connecting Railway, between Ridge avenue and Thirteenth street, in the Twenty-eighth ward of Philadelphia, to Chestnut Hill, in the Twenty-second ward, a distance of seven miles. The capital stock is \$1,000,000, and the stockholders are John P. Green, J. N. Dubarry, Henry D. Welsh, H. H. Houston, N. Parker Shortridge, R. D. Barclay, H. M. Phillips,

John P. Wetherill, and Wistar Morris, of Philadelphia.

A CHARTER was granted at Harrisburg, Penn., on the 8th inst. for the New Castle and Salamanca Railway Company, the line of which runs from a point near Wampum, Lawrence county, Penn., through Lawrence, Butler, Mercer, Venango, Forest, and Warren counties to a point on the New York State line at a point near the Allegheny River in Warren county, Penn., a distance of 130 miles. The capital is \$1,300,000. The stock is held by James S. Negley, of Pittsburg; Thomas P. Simpson, W. S. Garner, F. W. Lockwood, and Samuel K. Schwenk, of New York; H. E. Collins, John H. McCreary, James S. Negley, Jr., Frank Hunnings, Charles F. Calhoun, William F. Aull and Edwin S. Hanna, of Pittsburg. A. G. Negley, of New Castle; L. Scott, of Waynesburg, Ohio.

THE Baltimore and Philadelphia Railroad Company was chartered at the State department at Harrisburg, Penn., on the 8th inst. The line of the road will run from a point on the boundary line between Delaware and Pennsylvania, in Upper Chichester township, Delaware county, Pa., to the city of Philadelphia, a distance of twenty-one miles. The capital stock is \$1,200,000. The directors are Thomas M. King, Allegheny City; John M. Cleave, Pittsburg; Harry S. Burgess, Pittsburg; Robert Garrett, John W. Davis, John K. Cowen, Baltimore, and Wm. S. S. Bissell, Allegheny City. The president is James B. Washington, of Allegheny City. The principal office is in Philadelphia. This is the Pennsylvania Division of the Baltimore and Ohio Line between Philadelphia and Baltimore. A corps of engineers is now engaged in surveying the Maryland Division.

THE Nazareth and Philadelphia Railroad Company received its charter from the State Department at Harrisburg, Penn., on the 9th inst. The line of this road runs from a point near the borough of Nazareth, Northampton county, to a point on the North Pennsylvania Railroad between Iron Hill and Hellerstown, Northampton county, where a branch of the North Pennsylvania Railroad (long since abandoned) running to Freemansburg intersects the North Pennsylvania Railroad. The new road will be about ten miles long, wholly in Northampton county. The capital stock is \$100,000, and the stockholders are Charles Broadhead, Bethlehem; B. K. Jamison, J. H. Kershaw, Philip F. Kelly, A. G. Plumer, E. H. Millet, W. R. Merdith, William L. Nevin and F. R. Shattuck, of Philadelphia.

THE Little Miami Railroad, which is one of the Pennsylvania Railroad lines west of Pittsburg operated by the Pennsylvania Company, has a first mortgage 6 per cent loan, of which \$1,492,000 is outstanding and which matures May 2 next. This the company proposes to refund into an equal amount of thirty year 5 per cent first mortgage renewal bonds.

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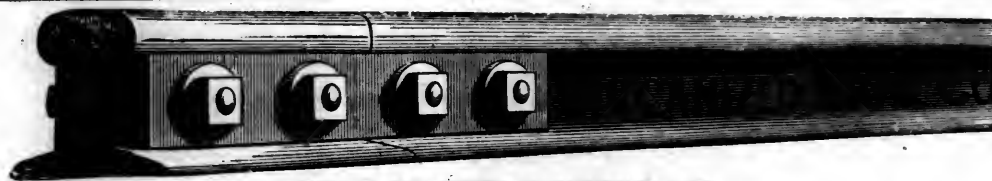
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—AT—

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which form non-metallic, permanently elastic compensating cushions, absorbing shocks and vibrations, and absolutely locking the nuts. These Washers have been adopted by a large number of railroads as the cheapest and best device in use. Flexible vulcanized-fibre dust guards and oil box packings, which are absolutely unaffected by oil and grease, are far more durable than leather and much cheaper.

Office and Factory, Wilmington. Del.

## H.W. JOHNS' ASBESTOS STEAM PACKING

Boiler Coverings, Millboard, Roofing,  
Building Felt, Liquid Paints, Etc.  
DESCRIPTIVE PRICE LIST AND SAMPLES SENT FREE.  
H. W. JOHNS MFG. CO., 87 Maiden Lane, N. Y.

## WESTERN ELECTRIC CO.

Chicago. Indianapolis.

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THE BEST QUALITY, AT BOTTOM PRICES.

Catalogues free on application.



**THE JENKINS STANDARD PACKING** is acknowledged by users as the Best in the world. Unlike all other Packings, the **Jenkins Standard Packing** can be made any thickness desired in a joint by placing two or as many thicknesses together as desired, and following up joint it vulcanizes in place and becomes a metal of itself (it is frequently called Jenkins Metal), and will last for years, as it does not rot or burn out. Avoid all imitations, as a good article is always subject to cheap imitations. The genuine has stamped on every sheet, "**Jenkins Standard Packing**," and is for sale by the Trade generally. Manufactured only by

## JENKINS BROS.,

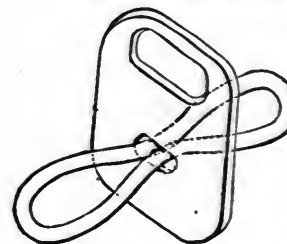
PROPRIETORS JENKINS PATENT VALVES, PACKING, &amp;c.

71 JOHN ST., NEW YORK.

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## SWEETLAND SAFETY LINK GUIDE.

Patented August 29, 1882.



The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six pounds.

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## RAILROAD IRON.

The undersigned, agents for the manufacturers, are prepared to contract to deliver best quality American or Welsh Steel or Iron Rails, and of any required weight and pattern. Also Spiegel and Ferro Manganese

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RAILROAD, MINING, AND  
MILL SUPPLIES.

No. 21 Park Place,  
NEW YORK.



### The Prospective Terminus of a Trans-Continental Railroad.

YAQUINA Bay is a deep and narrow harbor on the Oregon Coast, 120 miles south of the Columbia River. Its shape is not unlike a baby's stocking—*toe to the sea, heel to the northeast, with ankle reaching inland toward the southeast*—and its area is about fifteen square miles. Much of this space is shoal flat, but a deep ship channel, nowhere less than 1,200 feet wide, and broadening in places to double that width, extends from inside the bar to where the bay narrows to the Yaquina River, distance about six miles. This channel is nowhere interrupted by shoals, its depth varies from four to eight fathoms, and its bottom affords a secure hold for anchors. On all sides hills rise with gentle slope from the water-line to a considerable height, completely land-locking the harbor and protecting it from the northwest gales of summer and the southerly storms of winter. One river, the Yaquina, pours its flood into the ankle extremity of the figurative stocking, and three large tide sloughs, almost rivers in volume, empty into its northern and southern sides. These tributaries disgorge large streams, which, with the ebbing tides, rush in a deep swift current through the bay and out into the ocean.

Its surrounding features are much like those at the mouth of the Columbia River, but on a much smaller scale. A sand cliff on the north side rises abruptly to a height of 200 feet, in appearance very much like Cape Hancock, and the southern side is low and flat, not unlike Point Adams. The distance across from land to land is half a mile. The channel from deep water inside to deep water outside is 2,000 feet long. Its course is southwest from a point midway between the headlands out half a mile from the shore line, its outer end being offshore a quarter of a mile of the southern point. It is straight and narrow, and in rough weather is clearly marked by the breaker line on either side of it. During the greater part of its 2,000 feet the water is comparatively deep, and for only 600 feet is it dangerously shoal. This is the channel at the present time. Its southerly trend is due to the force of the summer north winds, which pile the sands in from the north side, but the winter gales from the south will force the sand in from the shore on the south side, and by the 1st of February the channel will have shifted a quarter of a mile toward the north.

The bar is of sand, overlying a rocky ledge, and the lead-line at extreme low water shows a depth of nine feet, which the tidal variation deepens to eighteen feet at high water. This is increased, at rare times when the underlying ledge is cleared of sand, to twenty-four feet, and this depth at high tide, it is expected by the government work now in progress to make permanent. It is proposed to build from the point on the south side of the entrance a jetty 3,000 feet directly west and out through the surf into the ocean. Its purpose is to close up the present or south channel and divert the flow westward in a straight line from a point midway between the headlands. This will afford a channel which neither the summer nor

winter storms can change, and will by confinement and increased acceleration of the currents scour the sand from the underlying rock ledge and keep the ledge clear. Work on this jetty was commenced in 1881, and it has been built out 550 feet from the high-water line. The first appropriation for the work was \$40,000, two-thirds of which was required for a plant—docks, tugs, scows, donkey engines, etc.—and the second appropriation, last year, was only \$10,000. The appropriation for this year is \$60,000, which will extend the jetty 700 or 800 feet. Work commenced on the 1st inst., and will be continued through the winter months with a force of twenty-five men. They will do nothing on the jetty itself, but will lay in a large store of rock to be used when good weather opens in the spring. The rock used on the work is hard and durable, and is brought by scows from a quarry on the Yaquina River fourteen miles from the point, and landed on the inside shore of the point half a mile from the work itself. The jetty is built of brush mattresses, cribs, and heavy stone, is from sixty to 100 feet wide at the base, twenty-five feet wide at the top, and so far has been built up to high-water line. It pushes out into the surf, and must stand the tremendous pounding of the waves with the added force of the currents as they rush in and out. It stood through last winter's storms without break or damage, and now appears to be solid as the eternal hills. From the beginning, J. S. Polhemus, civil engineer, an attaché of the United States Engineer office, at Portland, has had charge of the work.

The rock ledge which forms the backbone of the Yaquina Bar is a series of comparatively sharp points which could easily be blasted out. Expert engineers who have examined it variously estimate the cost at from \$275,000 to \$450,000, the larger figure probably more nearly approaching the cost. But until the business of the bay is greatly increased, it is not probable that the government can be induced to begin so great and costly a work. Three-quarters of a mile from the shore line, and directly opposite the entrance, a sunken reef lies parallel to the coast line. It is composed of a series of ledges, upon one of which the water is but eighteen feet deep at low tide. In rough weather the surf breaks heavily upon this reef, but the waves spend their force there, and even in the most boisterous storms the space inside the reef and between it and the entrance is comparatively calm. Vessels entering, sail south of this reef and before reaching the channel pass into the space protected by it. This is a peculiar advantage which no other harbor in the world possesses, and is of the highest value. There is no tug on the bar, but a pilot lives upon the point near the government work, and he can easily be hailed by approaching vessels; but they too often trust to their charts and to luck and come unpiloted. While I was at the bay a little steamer, the *Ona*, entered, guided by an Indian sailor whose only knowledge of the channel had been gained by one or two former visits.

So much for the entrance. It is now eighteen feet deep at high tide. Its depth will soon be permanently increased to twenty-four feet, and

by the expenditure of less than half a million dollars it can be made deep enough to float the deepest ships that sail the ocean. Yaquina River, which empties into the bay at its southeastern extremity, is at its mouth about equal in width to the Willamette at Salem, and its volume is much greater. It, with its tributaries, the Big Elk and Little Elk and a great number of creeks, drains a great section of country west of the Cascade Mountains, and pours out their gathered waters in a swift deep stream. It is navigable to a point twenty miles above its junction with the bay. Two small steamboats ply regularly upon it, and schooners have frequently ascended as far as Elk City, twenty-five miles from the ocean. There is some tide-flat and bottom land along its banks, but the greater distance they rise from the water-line to steep hills, clothed to their summits with a thick undergrowth, which, at this season, presents a beautiful variety of Autumn tints. There is no single landscape feature on the river which may be called grand, but along its whole course the views are fine. Neat homes dot the alluvial patches contiguous to it, and even among the high lands there are many good places.—*Portland Oregonian*.

THE directors of the Littleton and Franconia Railroad Company, which was organized at Littleton, N. H., on the 2<sup>nd</sup> ult., are as follows: Cyrus Eastman, Henry L. Tilton, George B. Redington of Littleton, E. B. Parker, Chas. H. Greenleaf of Franconia, Samuel N. Bell of Manchester, Joseph R. Dodge of Plymouth; Cyrus Eastman, president; Henry L. Tilton, treasurer; E. C. Stevens, clerk. It was voted that the directors be instructed to solicit stock and build the road.

ACCORDING to the California papers the Central Pacific railroad is well equipped to prevent snow blockades this year. The famous snowsheds on the Sierra Nevadas have all been repaired and strengthened and several miles of new ones have been built. New snow-ploughs have been constructed—steel-clad ones, capable of ploughing out twenty feet of snow and to stand the pressure of twenty engines if necessary.

IN the case of the Alabama and Chattanooga Railroad Company vs. the South and North Railroad Company, involving the title to certain lands in Alabama covered by their two overlapping land grants, Secretary Teller, of the Department of the Interior, awards the lands to the first-named company, and directs that certificates be issued accordingly.

HANSOM cabs are run in Philadelphia by the Pennsylvania Railroad Company, and passengers are carried to nearly any point in the city for twenty-five cents, or two persons for the same price. A lively man has had some vehicle built in close imitation, and travelers get into them without knowing any difference, until called upon to pay a dollar or two.

THE Negritos, who inhabit the Philippine Islands, have an interesting custom. Before eating his meal a Negrito must invite aloud any hungry person who may happen to be within hearing to join him at the meal. Whoever violates this custom is killed.

# THE SALMON CAR HEATER



"36 per cent of coal saved and the car kept noticeably warmer!"

by using **THE SALMON CAR HEATER**.  
It Insures Safety from Fire in case of Accident,  
Economy in Fuel and **RAPID CIRCULATION**. It heats quickly, is **SELF-REGULATING**, and can be used for  
either **STEAM OR HOT WATER**.

The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low state of combustion without danger of chilling the fire.

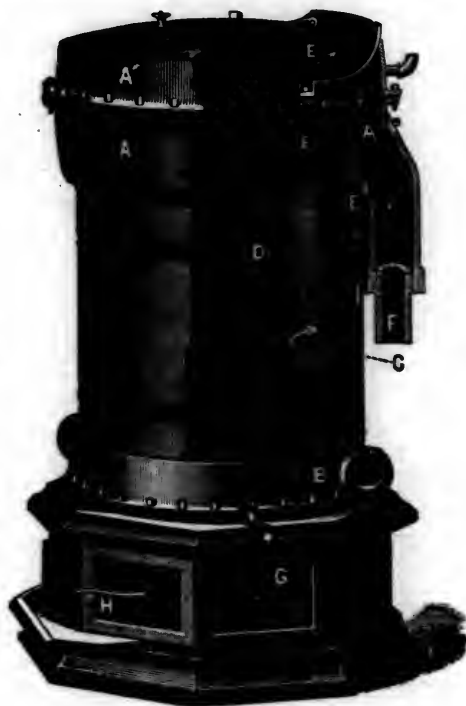
Once filled with coal the fire will last from 24 to 60 hours, according to weather, without replenishing, as proved by actual test.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

**CORRESPONDENCE SOLICITED.**

**The Salmon Heater Co.**

OFFICE, 35 CONGRESS STREET, BOSTON, MASS.



Established 1863.

## MOLLER & SCHUMANN

Manufacturers of Fine

### COACH AND CAR VARNISHES.

BROOKLYN, N. Y. U. S. A.

**STEEL CAR PUSHER**

MADE ENTIRELY OF STEEL  
ONE MAN with it can easily  
move a loaded car.  
Manufactured by E. P. DWIGHT,  
DEALER IN RAILROAD SUPPLIES,  
407 LIBRARY ST.,  
PHILADELPHIA.

ESTABLISHED IN 1836.

**LOBDELL CAR WHEEL COMPANY,**  
Wilmington, Delaware.

GEORGE G. LOBDELL, President.  
WILLIAM W. LOBDELL, Secretary.  
P. N. BRENNAN, Treasurer.

First-Class English  
**IRON AND STEEL RAILS**  
AT LONDON PRICES, F. O. B.

We also purchase all classes of Railroad Securities  
and negotiate loans for Railroad Companies.

**Wm. A. Guest & Co.,**  
MECHANICS' BANK BUILDING,  
Nos. 21 and 33 Wall Street, - New York.

**SAFETY RAILROAD SWITCHES,**  
WITH MAIN TRACKS UNBROKEN.

*Railroad Crossings, Frogs, and other Railroad Supplies,*

MANUFACTURED BY THE

**WHARTON RAILROAD SWITCH CO.,**  
PHILADELPHIA.

Works: 23d and Washington Avenue.  
Office: 28 South 3d Street.

**WATER TUBE STEAM BOILERS.**



**THE BABCOCK & WILCOX CO.,**  
30 Cortlandt St, New York.  
116 James Street, Glasgow.



**REMINGTON STANDARD**  
Only Rapid and Durable  
**WRITING MACHINE**  
Used at sight. Phonography practically taught. Situations procured for competent Students. Send for circulars. W. O. WYCKOFF, Ithaca, N. Y.

**MUNN & CO. PATENTS**  
NEW YORK  
ESTABLISHED 1846

We continue to act as solicitors for patents, caveats, trade-marks, copyrights, etc., for the United States, and to obtain patents in Canada, England, France, Germany, and all other countries.

Thirty-six years' practice. No charge for examination of models or drawings. Advice by mail free.

Patents obtained through us are noticed in the **SCIENTIFIC AMERICAN**, which has the largest circulation, and is the most influential newspaper of its kind published in the world. The advantages of such a notice every patentee understands.

This large and splendidly illustrated newspaper is published **WEEKLY** at \$3.20 a year, and is admitted to be the best paper devoted to science, mechanics, inventions, engineering works, and other departments of industrial progress, published in any country. Single copies by mail, 10 cents. Sold by all news-dealers.

Address, Munn & Co., publishers of Scientific American, 261 Broadway, New York.

Handbook about patents mailed free.



# Statement of the Public Debt of the United States, January 1, 1883.

DEBT BEARING INTEREST.		
	Amount Outstanding.	Accrued Interest.
per cent funded loan of 1881, continued at 3½ per cent.....	\$99,326,200 00	\$579,402 83
3 per cent loan of July 12, 1882.....	289,563,950 00	1,447,819 75
4½ per cent funded loan of 1891.....	250,000,000 00	937,500 00
4 per cent funded loan of 1907.....	738,950,550 00	7,389,505 50
4 per cent refunding certificates.....	404,750 00	4,047 50
3 per cent navy pension fund.....	14,000,000 00	210,000 00
Aggregate of debt bearing interest.....	\$1,392,245,450 00	\$10,568,275 58
Interest due and unpaid.....		1,498,912 96
DEBT ON WHICH INTEREST HAS CEASED SINCE MATURITY.		
	Amount Outstanding.	Interest due and unpaid.
4 to 6 per cent. old debt, 1837.	\$57,665 00	\$64,174 81
5 per cent. Mexican indemnity stock, 1846-'52.....	1,104 91	85 74
6 per cent. bonds, 1847-'67.....	1,250 00	22 00
6 per cent. bounty land scrip, 1847-'49.....	3,275 00	213 06
5 per cent. Texas indemnity stock, 1850-'64.....	20,000 00	2,945 00
5 per cent. bonds, of 1858-'74	7,000 00	875 00
5 per cent. bonds, of 1860-'71	10,000 00	600 00
6 per cent. 5-20 bonds, 1862, called.....	361,550 00	5,315 15
6 per cent. 5-20 bonds, June 1864, called.....	50,400 00	994 40
6 per cent. 5-20 bonds, 1865, called.....	70,450 00	18,335 25
5 per cent. 10-40 bonds, 1864, called.....	283,250 00	42,710 69
6 per cent. Consol. bonds, 1865, called.....	359,000 00	11,945 73
6 per cent. Consol. bonds, 1867, called.....	798,200 00	109,488 58
6 per cent. Consol. bonds, 1868, called.....	247,950 00	20,682 99
6 per cent. loan, Feb. 8, 1861, matured Dec. 31, 1880.....	75,000 00	4,830 00
5 per cent. funded loan 1881, called.....	567,750 00	1,335 66
5 per cent funded loan 1881, called, continued at 3½ p.c.	7,271,500 00	36,257 89
Oregon War Debt, March 2, 1861, matured July 1, 1881.	7,800 00	1,558 50
6 per cent loan of July 17 and Aug. 5, 1861, matured June 30, 1881.....	482,000 00	8,406 00
6 per cent loan of July 17 and Aug. 5, 1861, continued at 3½ per cent, called.....	1,707,500 00	19,721 44
6 per cent. loan of March 3, 1863, matured June 30, 1881.	152,100 00	4,236 13
6 per cent loan of March 3, 1863, continued at 3½ per cent, called.....	1,800,350 00	18,203 98
1-10 to 6 per cent. Treasury notes, prior to 1846.....	82,525 35	2,668 06
1-10 to 6 per cent. Treasury notes, 1846.....	5,900 00	200 60
6 per ct. Treasury notes, 1847	950 00	57 00
3 to 6 per cent. Treasury notes, 1857.....	1,700 00	99 00
6 per ct. Treasury notes, 1861.	3,000 00	364 50
7 3-10 per cent. 3 years' Treasury notes, 1861.....	16,300 00	1,104 43
5 per cent. 1 year notes, 1863..	41,625 00	2,075 35
5 per cent. 2 year notes, 1863.	32,400 00	1,602 30
6 per ct. compound interest notes, 1863-64.....	217,420 00	44,447 11
7 3-10 per cent. 3 years' Treasury notes, 1864-65.....	138,500 00	20,366 05
6 per cent. certificates of indebtedness, 1862-63.....	4,000 00	253 48
4 to 6 per cent. temporary loan, 1864.....	2,960 00	244 19
3 per cent. certificates, called.	5,000 00	394 31
Aggregate of debt on which interest has ceased since maturity.....	\$14,887,015 26	\$446,814 38
DEBT BEARING NO INTEREST.		
Demand notes, 1861-62.....	\$59,295 00	
Legal tender notes, 1862-63.....	346,681,016 00	
Certificates of Deposit.....	9,585,000 00	
Gold certificates, 1863 and 1882	64,619,840 00	
Silver certificates, 1878.....	72,848,660 00	
Unclaimed interest.....		\$5,339 96
Fractional currency, 1862, 1863 and 1864 \$15,398,008 17		
Less amount estimated as lost or destroyed, act of June, 21, 1879.....	8,375,934 00	
	7,022,074 17	
Aggregate of debt bearing no interest.....	\$500,815,885 17	\$5,339 96

## RECAPITULATION.

	Amount Outstanding.	Interest.
Debt bearing interest in coin, viz:		
Bonds at 5 per cent, continued at 3½ per cent.	\$99,326,200 00	
Bonds at 4½ per cent.....	250,000,000 00	
Bonds at 4 per cent. ....	738,950,550 00	
Bonds at 3 per cent.....	289,563,950 00	
Refunding certificates...	404,750 00	
Navy pension fund, 3 p.c	14,000,000 00	
	\$1,392,245,450 00	\$12,067,188 54
Debt on which interest has ceased since maturity.	14,887,015 26	446,814 38
Debt bearing no int., viz:		
Old demand and legal-tender notes.....	\$346,740,311 00	
Certificates of deposit....	9,585,000 00	
Gold & silver certificates.	137,468,500 00	
Fractional currency .....	7,022,074 17	
	\$500,815,885 17	
Unclaimed interest.....		5,339 96
	\$1,907,948,350 43	\$12,519,342 88
Total debt, principal and interest to date, including interest due and unpaid....		\$1,920,467,693 31
AMOUNT IN TREASURY.		
Interest due and unpaid.....	\$1,489,912 96	
Debt on which interest has ceased.....	14,887,015 26	
Interest thereon.....	446,814 38	
Gold and silver certificates.....	137,468,500 00	
U. S. notes held for redemption of certificates of deposit.....	9,585,000 00	
Cash balance available Jan. 1, 1883.....	149,037,773 87	
	\$312,924,016 47	
Debt, less am't in Treas'y Jan. 1, 1883....	\$1,607,543,676 84	
Debt, less am't in Treasury Dec. 1, 1882.	1,622,956,899 69	
Decrease of debt during the month.....	\$15,413,222 85	
Decrease of debt since June 30, 1882....	\$81,370,783 88	
BONDS ISSUED TO THE PACIFIC RAILROAD COMPANIES, INTEREST PAYABLE IN LAWFUL MONEY.		
	Amount Outstanding.	Accrued Interest not paid.
Central Pacific bonds, 1862-64.....	\$25,885,120 00	\$776,553 60
Kansas Pacific bonds, 1862-64	6,303,000 00	189,090 00
Union Pacific bonds, 1862-64	27,236,512 00	817,095 36
Cent. Branch Union Pacific bonds, 1862-64.....	1,600,000 00	48,000 00
West'n Pacific Bonds, 1862-64	1,970,560 00	59,116 80
Sioux City & Pacific bonds, 1862-64.....	1,628,320 00	48,849 60
Totals .....	\$64,623,512 00	\$1,938,705 36
Interest paid by the United States, \$55,344,682.74; interest repaid by transportation of mails, &c., \$16,123,860.59; interest repaid by cash payments: 5 per cent net earnings, \$655,198.87; balance of interest paid by United States, \$38,565,623.28.		

The foregoing is a correct statement of the public debt, as appears from the books and Treasurer's returns in the Department at the close of business, December 30, 1882.

CHARLES J. FOLGER,  
Secretary of the Treasury.

## Railroad Pass Law.

THE case of the Buffalo, Pittsburgh and Western Railroad Company against O'Hara, error to the Court of Common Pleas of Forest county, was decided by the Supreme Court of Pennsylvania on the 30th ult. The facts of the case are as follows: Mrs. Ellen O'Hara, wife of an employé, was riding on a pass between Oil City and Trunkville, in Forest county. The train was dashed into and she was scalded and otherwise injured. The jury awarded her \$3,000, which sum was reduced to \$2,000. On the face of the pass, in fine print, was a clause purporting to be a release of all liability for damage to the person or baggage of the party using the pass, resulting from the negligence of the company or its servants. The condition was in the following terms: "Conditioned that the person accepting this pass assumes all risk of accident to his person or property without claims for damages on this corporation. Good only for the person named." It was signed by the Superintendent and Supervisor. The Supreme Court held that "a common carrier

cannot protect himself by special contract from liability for negligence. Against his extraordinary liability as a common carrier he may protect himself by such an agreement, but not from his liability as a simple bailee. It may well be doubted whether the provision in this pass being against accidents can be held applicable at all to cases where the injury has resulted from negligence. If the free pass in this case was unlawful, the conductor should have demanded the regular fare, and his not doing so did not make O'Hara or his wife trespassers or destroy their rights as passengers." The judgment of the lower court was affirmed.

## The Automatic Brake.

APPENDED is the substance of a recent report submitted to the president of the American Brake Company, St. Louis, by its vice-president and general agent. The document is dated December 5.

"Thirty daily inspections, ending 31st ult., of the cars equipped with our Automatic Brakes upon the St. Louis and San Francisco Railway, as they have come during that time into St. Louis the depot and yards, show that we have examined a total of 690 cars, of which 112 had been running one month; sixty-eight two months; 136, three months; three, four months; one, five months; three, six months; three, seven months; 149, nine months; 147, ten months; thirty-one, eleven months; thirteen, twelve months; ten, eighteen months, and fourteen, twenty-two months. Of these, 641 were O. K. in all respects, needing no attention; forty-nine needed repair and putting on new pieces in yards. The total cost of new pieces required for the above repairs was \$18.18. Of the cars requiring repairs thirty-eight were of the horizontal pattern, and eleven were of the upright pattern."

WE have heard of a great many Chinese puzzles, but the hardest one to guess lives in Washington. We don't know his name, but he is the Minister from China to this great Republic. He is a very wealthy man, but he actually lives in the land of show without any show at all. He does not buy his books by their bindings nor his pictures by the square foot, which make some wealthy citizens wonder how in the world he does buy them. He gives \$100,000 per year to the support of the poor Hon Nan, which, in the opinion of a vast number of good Christian people, is a shameful waste of money which might be used in champagne suppers and in equipages and flunkies well calculated to make the people stare and positively turn green with envy. Does this poor pagan think he can teach us—us Americans—a lesson in true philanthropy? Now, the puzzle is to know what our duty is in view of this grave fact. Shall we any longer send missionaries to China, or shall we receive this eccentric gentleman as a missionary to us? Is he a pagan and are we Christians? We confess that the more we think of it the more mixed we get. Perhaps it is that we have the theory and no practice, while he has the practice and no theory.

ADVERTISE in the RAILROAD JOURNAL.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of **Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.**

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs,** as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,	A. V. H. CARPENTER,
General Manager.	Gen. Pass. and Tick. Agt.
J. T. CLARK,	GEO. H. HEAFFORD,
General Sup't.	Ass't Gen. Pass. Agt.

**Baughman's**  
PATENT  
**STORM-PROOF RAILWAY SIGNALS.**  
—FOR—  
Stations, Crossings, Drawbridges, Switches, Caboose, or Rear-of-Train Lanterns, etc.

**They will not Blow out or Freeze out.**

There is but one opening in the top for the smoke to escape, and that opening is always kept on the opposite side from the wind by the top resting on a point, and is turned with the wind by the *weather vane* attached to the top.

It also takes air through the same opening through an outer chimney, a double top of the frame and tubes running down to the lamp.

The air can also be taken from the inside of the building through the gas pipe holder, which is another way to head off the storms.

**BAUGHMAN & MARKEY,**  
Albion, Ind.

SEND FOR CIRCULAR.

**BRUSHES**  
For CAR BUILDERS' and RAIL-  
ROAD CO.'S Purposes.

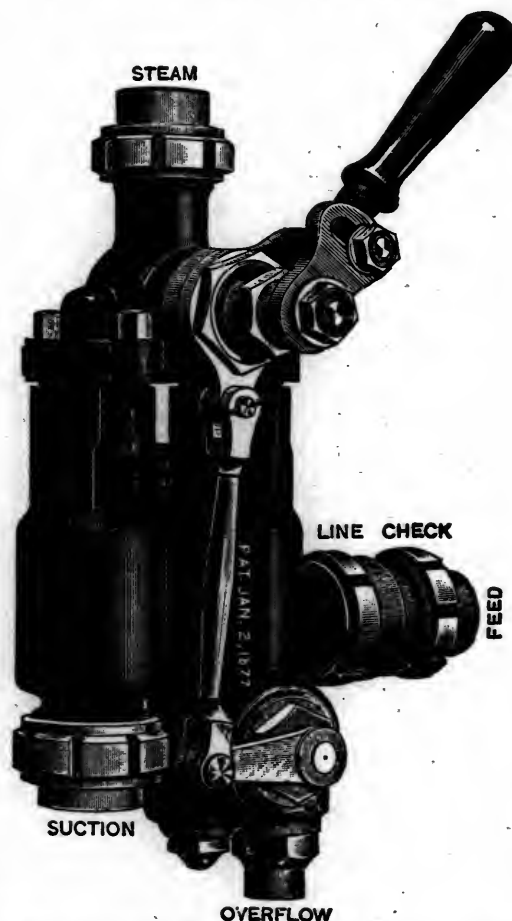
In Every Variety.

**JOHN G. McMURRAY & CO.**

277 Pearl Street, New York.

OLDEST BRUSH HOUSE IN AMERICA.

THE IMPROVED  
**HANCOCK INSPIRATOR**  
—FOR—  
**LOCOMOTIVES.**



Send for Circulars and Full Particulars to the  
**HANCOCK INSPIRATOR CO.,**  
No. 34 Beach Street,  
BOSTON, MASS.

**COLLINS, BOUDEN & JENKINS,**  
—BANKERS—  
25 PINE ST. — NEW YORK

Interest allowed on Deposits subject to Draft, Securities, &c., bought and sold on Commission.

Investment Securities always on hand.

**John H. Davis & Co.,**  
BANKERS AND BROKERS,

No. 17 Wall Street, New York.

Interest allowed on temporary and standing deposits Stocks and Bonds bought and sold on Commission only, either on Margin or for Investment.

**Paine, Webber & Co.**  
BANKERS & BROKERS,

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(Members of the Boston Stock Exchange.)

Devote special attention to the purchase and sale of Stocks and Bonds in the Boston market, the careful selection of securities for investment, and the negotiation of commercial paper.

WM. A. PAINE. WALLACE G. WEBBER. C. H. PAINE.

**BROWN BROTHERS & Co.,**  
No. 59 WALL STREET, NEW YORK,

—BUY AND SELL—

**BILLS OF EXCHANGE**

—ON—

GREAT BRITAIN, IRELAND, FRANCE, GERMANY, BELGIUM, AND HOLLAND,

Issue Commercial and Travelers' Credits in Sterling, AVAILABLE IN ANY PART OF THE WORLD, AND IN FRANCS IN MARTINIQUE AND GUADALOUPE.

Make TELEGRAPHIC TRANSFERS OF MONEY between this and other countries, through London and Paris.

Make Collections of Drafts drawn abroad on all points in the United States and Canada, and of drafts drawn in the United States on Foreign Countries.

## A FREE GIFT.

Any of our readers who will enclose two three-cent stamps in a letter to the **Columbus Buggy Co., Columbus, O.,** will receive in return a beautiful engraving in colors, representing an **Australian scene**, and their manner of traveling in that country with **Ostriches** as a motor. They give this picture, (the packing costing six cents), to all who may send for it, desiring in this manner to make themselves more widely known to the people.

[Mention this paper.]

ESTABLISHED 1842.

**INGERSOLL LIQUID RUBBER PAINT.**

The only Paint unaffected by Moisture, Fumes from burning Coal Gas, Sun, Salt Air or Water.

**THIS IS RELIABLE.**

**INGERSOLL'S PAINT WORKS,**  
76 FULTON STREET,  
Cor. Gold Street, NEW YORK.



## The Mysteries of Metals.

NOTWITHSTANDING the wonderful progress, says an exchange, that has been made during the last half century in the constitution and working of the useful metals, there is yet a vast deal to be learned. The metals, when pure, are commonly supposed to be simple elements, yet there are some reasons for supposing that it may be proved that at least some of them are compounds. Even the great Faraday gave utterance to the thought that the dreams of the alchemist might yet be realized—that gold and other metals might be found to be compounds, and that means might be devised whereby those compounds might be separated, and afterwards so differently reunited that the baser metals might be converted into precious. The changes which are wrought in iron and steel by converting, annealing and hardening processes are far from being understood by the most advanced metallurgists of the present day. The mysteries of hydrogen gas and its intimate relations with iron are as much a puzzle as they were fifty years ago, and the theory advanced by Graham, that hydrogen is a metal, is still maintained by many chemists. It is only a few years ago that absolutely pure iron became known to scientists, and it is now shown to be a metal almost as "unstable as water," and still found in the laboratory as a great curiosity. What had previously been known as pure iron was shown by Jacobi to be a compound of iron and hydrogen. He first separated the two so-called elements. During the process the iron increased in volume, changed from a dark to a silver-white substance, very ductile, and so soft as to be nearly as readily cut as lead. The experiment proved that hydrogen played an important part in hardening and tempering—as much so as carbon—but how or why none know to this day. It is found that much more difficulty is experienced in rolling and otherwise manipulating gold in a factory where much electricity is generated by the action of machinery than in a room where no machinery is in operation, and where, consequently, frictional electricity is absent. The trouble is manifested in a disposition of the edges of the plates of thin bars to crack. Many other peculiarities, already known, might be mentioned, and there is no doubt that closer observation will largely increase the number of curious and yet inexplicable phenomena connected with the working and general characteristics of the metals, both useful and precious.

—*Mechanical News.*

A HANDSOMELY dressed man entered an Arkansas newspaper office, and drawing out his pocketbook said to the editor:

"I've got something here for you. I've been an admirer of your paper for some time and—"

"Wish to subscribe for a year or six months?"

"I don't wish to subscribe. You know we've just had Thanksgiving and I jotted down here a little something—Here it is. 'The people of the United States may rejoice at Thanksgiving, but foreign powers, particularly Turkey—'

The loud report of a horse-pistol rang through the quiet place. A coroner cast his gloomy shadow on the premises. Verdict, "Justifiable homicide."—*Arkansas Traveler.*

## List of Master Car Builders

## OF THE RAILROADS OF THE UNITED STATES AND CANADA.

Adirondack Railroad: Jas. J. Traver, Saratoga, N. Y.  
 Albert Railway: Jas. McKay, Hillsboro, N. B.  
 Allegheny Valley Railroad: R. Gunning, Verona, Pa.  
 Arkansas Midland Railroad: J. B. Johnson, Helena, Ark.  
 Asheville and Spartanburg Railroad: W. B. Brown, Spartanburg, S. C.  
 Baltimore and Ohio Railroad: E. Ohio Riv. div., L. Packard, Baltimore, Md.  
 Bangor and Piscataquis R. R.: J. W. Comins, Oldtown, Me.  
 Bedford, Springville, Owensburg and Bloomfield Railway: Richard G. Elliott, Bedford, Ind.  
 Bell's Gap Railroad: A. Zimmerman, Bellwood, Pa.  
 Bodie Lumber Co.: E. M. Luckett, Bodie, Cal.  
 Boston, Concord, Montreal and White Mts: L. D. Pickering, Lake Village, N. H.  
 Boston, Hoosac Tunnel and Western: John S. Ellis, Mechanicville, N. Y.  
 Boston, Revere Beach and Lynn: John Coghlan, Boston, Mass.  
 Boston and Albany: F. D. Adams, Allston, Mass.  
 Boston and Lowell and Concord: J. T. Gordon, Concord, N. H.  
 Boston and Maine: D. C. Richardson, Lawrence, Mass.  
 Boston and Providence: Jno. Lightner, Roxbury, Mass.  
 Bradford, Bordell and Kinzua: John Delaney, Bradford, Pa.  
 Buff., Pittsburg and W'n: John Monks, City, Pa.  
 Burlington, Cedar Rapids and Northern: R. W. Bushnell, Cedar Rapids, Ia.  
 Burlington and Lamoille: F. G. Brownell, Burlington, Vt.  
 Camden and Atlantic: Samuel Wills, Camden, N. J.  
 Canada Southern: Robert Potts, St. Thomas, Ont.  
 Canadian Pacific: F. C. Butterfield, Winnipeg, Man.  
 Cape F'r and Yarkin Val.: Isaac W. Clark, Fayetteville, N. C.  
 Catsanqua and Fogelsville: Chas. J. Holbach, Catsanqua, Pa.  
 Central and South-Western Railroads (Ga.).  
 Cen. Div.: R. M. Barthlemess, Savannah, Ga.  
 Southwestern Div.: James A. Knight, Macon, Ga.  
 Central Railroad of New Jersey.  
 Central Div.: Geo. Hackett, Elizabethport, N. J.  
 N. J. So. Div.: Chas. N. Sawyer, Manchester, N. J.  
 Central Iowa: T. L. Seevers, Marshalltown, Ia.  
 Central Pacific: Benj. Welch, Sacramento, Cal.  
 Western, Visalia and Tulare Divs. and Northern: W. D. Ludlow, Oakland, Cal.  
 Central Vermont Railroad.  
 Rut. Div.: N. L. Davis, Rutland, Vt.  
 New London and No'n: S. O. Banks, New London, Ct.  
 Chattahoochee: Joseph P. Burleigh, Ashland, Ky.  
 Cherokee: C. E. Scruton, Cedartown, Ga.  
 Chesapeake and Ohio Railway.  
 Eastern Div.: J. N. King, Richmond, Va.  
 Hunt. Div.: H. C. Bassinger, Huntington, W. Va.  
 Chicago, Milwaukee and St. Paul Railroad.  
 Southwestern Div.: E. A. Eddy, Racine, Wis.  
 Northern Div.: Wm. E. Kittridge, Milwaukee, Wis.  
 Chicago, Pekin and Southwestern: J. N. Chilson, Streator, Ill.  
 Chicago, Rock Island and Pacific: B. K. Verbryck, Chicago, Ill.  
 Ill. Div.: Samuel Pullman, Chicago, Ill.  
 Ia. Div.: Chas. M. Leonard, Davenport, Ia.  
 Southwestern Div.: Chas. R. Best, Trenton, Ia.  
 K. and Des. M. Div.: Henry Kummer, Keokuk, Ia.  
 Chicago, St. Louis and New Orleans: Geo. W. Baxter, McComb City, Miss.  
 Chicago, St. Paul, Minneapolis and Omaha: W. B. Rice, St. Paul, Minn.  
 Chicago and Northwestern: Geo. W. Lowe, Clinton, Ia.  
 Cincinnati, Hamilton and Dayton: W. H. H. Allison, Cincinnati, O.  
 Cincinnati, Indianapolis, St. Louis and Chicago: J. S. Patterson, Cincinnati, O.  
 Cincinnati, New Orleans and Texas Pacific: John Richardson, Cincinnati, O.  
 Ala. Gr. S'n Div.: Fred Morgan, Chattanooga, Tenn.  
 V. S. and P. Div.: W. Bell Smith, Monroe, La.  
 Cincinnati Northern: T. J. Hamer, Cincinnati, O.  
 Cincinnati, Wabash and Michigan: S. B. Tinker, Wabash, Ind.  
 Clarkaburg, Weston and Glenville: F. Dillie, Nottingham, O.  
 Cleveland, Columbus, Cincinnati and Indiana and Indianapolis and St. Louis Railways and Dayton and Union Railroad: T. W. Ranson, Mattoon, Ill.  
 Cleveland, Mt. Vernon and Delaware: G. M. Taylor, Mt. Vernon, O.  
 Cleve., Youngstown and Pitts.: C. H. Dorman, Alliance, O.  
 Coburg, Peterborough and Marmora: John Tinney, Cobourg, Ont.  
 Columbus, Hocking Valley and Toledo: J. M. Rockafeld, Columbus, O.  
 Conn. Riv. and Ver. Val.: Robert Hitchcock, Springfield, Mass.  
 Cornwall: Levi Blonch, Lebanon, Pa.  
 Crown Point Iron Co.: J. C. Sherman, Crown Point, N. Y.  
 Cumberland and Penn.: Nathan Binix, Mt. Savage, Md.  
 Danbury and Norwalk: N. M. George, Danbury, Conn.  
 Danville, Olney and O. R.: Louis Parisoe, Kansas, Ill.  
 Del., Lackawanna and W. and N. Y., Lack. and W.: Robt. McKenna, Scranton, Pa.  
 Delaware and Chesapeake: Chas. E. Mason, Oxford, Md.  
 Delaware and Hudson Canal Co.  
 Susq. Div.: J. R. Skinner, Oneonta, N. Y.  
 Sar. and Ch. Divs.: Chr. Korner, Green Island, N. Y.  
 Pa. Div.: T. Orchard, Carbondale, Pa.

Denver and New Orleans: S. P. Weller, Denver, Col.  
 Denver and Rio Grande: N. W. Sample, Burnham, Col.  
 Des Moines and Ft. Dodge: E. A. Avery, Grand Junction, Ia.  
 Det., Lansing and No'n: G. C. Watrous, Ionia, Mich.  
 Dunkirk, Allegheny Valley and Pittsburgh: J. C. Haggitt, Dunkirk, N. Y.

East Tennessee, Virginia and Georgia.

East Tenn. Div.: Jos. Armbruster, Knoxville, Tenn.  
 Alabama Div.: W. W. Pierce, Selma, Ala.

Elizabeth City and Norfolk: J. S. Whitworth, Norfolk, Va.  
 Eureka and Palisade: A. S. Longley, Palisade, Nev.  
 Europ. and No. Amer.: A. O. Bailey, Mattawamkeag, Me.

Fitchburg: J. W. Marden, Charlestown, Mass.

Flint and Pere Marq.: R. McPherson, E. Saginaw, Mich.  
 Florida Southern: M. R. Miller, Palatka, Fla.

Florida Transit: G. Hernandez, Fernandina, Fla.  
 Ft. Madison and N'hwestern: L. Lamb, Ft. Madison, Ia.  
 Ft. Wayne, Cin. and Louisv.: C. W. Hollister, Jackson, Mich.

Galveston, Harrisburg and San Antonio: James Alexander, Harrisburg, Tex.

Georgia: T. M. Preval, Augusta, Ga.

Georgia Pacific: J. B. Shelton, Greenville, Miss.

Grand Tower and Carbondale: Hugh Smith, Grand Tower, Ill.

Gulf, Col. and Santa Fe: W. H. Martin, Galveston, Tex.

Hanover Junction, Hanover and Gettysburg: Henry Britcher, Hanover, Pa.

Hartford and Conn. Val.: S. E. Brewer, Hartford, Conn.

Houston and West Tex.: C. F. Schelewa, Houston, Texas.

Houston and Tex. Cen.: James McGee, Houston, Tex.

Illinois and St. Louis: Charles Rotha, E. St. Louis, Ill.

Intercolonial: Edw. Shaffer, Moncton, N. B.

Iron Mountain and Helena: Wm. Summers, Helena, Ark.

Jacksonville and Washington: J. E. Lordley, Dymond City, N. C.

Junction and Breakwater: Breakwater and Frankford

and Worcester: W. H. Virden, Lewes, Del.

Kansas City, Fort Scott and Gulf: A. N. Montier, Kansas City, Mo.

Kentucky Central: J. L. Hackathorn, Covington, Ky.

Knox and Lincoln: C. L. Turner, Bath, Me.

Lake Shore and Michigan So'n: John Kirby, Cleveland, O.

Buffalo Div.: A. C. Robson, Buffalo, N. Y.

Erie Div.: J. Withycombe, Cleveland, O.

Toledo Div.: W. O. Smith, Norwalk, O.

Western Div.: Frank O. Bray, Adrian, Mich.

Lehigh Valley: John S. Lentz, Packerston, Pa.

Little Rock, Miss. River and Texas: F. Hufsmith, Arkansas City, Ark.

Little Rock and Fort Smith: James Malone, Argenta, Ark.

Long Island: C. A. Thompson, Long Island City, N. Y.

Louisville, New Albany and Chicago: Josiah Bettis, New Albany, Ind.

Maine Central: C. H. Kenison, Augusta, Me.

Manhattan: H. A. Webster, New York, N. Y.

Marquette, Houghton and Ontonagon: H. D. Lyons, Marquette, Mich.

Memphis and Little Rock: P. Twitchell, Argenta, Ark.

Mexican Central: J. H. O'Brien, City of Mexico.

Michigan Central: Robert Miller, Detroit, Mich.

Midland of Canada: Edward Douglas, Port Hope, Ont.

Victoria Div.: H. H. Harry, Lindsay, Ont.

Toronto and Nipissing Div.: Chas. E. Caron, Uxbridge, Ont.

Mineral Range: T. J. Shellhorn, Hancock, Mich.

Mississippi and Tenn.: S. J. Bolton, Memphis, Tenn.

Missouri Pacific: H. H. Sessions, St. Louis, Mo.

[TO BE CONTINUED].

## Contributory Negligence.

IN the case of Dowling vs. the New York Central and Hudson River Railroad Company the Court of Appeals of New York decided in favor of the plaintiff. In this case a child nine years of age was injured by a locomotive as she was crossing a railroad track. She looked to the west for trains but not to the east, as one of the railroad shops obstructed the view. There was no flagman at the crossing, and no danger alarm was given by the engineer. A suit was brought for damages, and the company relied for its defense on the contributory negligence of the child in not showing due care in crossing the track. Judge Earl, in the opinion, said: "The question of due care by the child is to be determined by the jury; we cannot say, as matter of law, that she contributed to her injuries. An infant is bound to use that degree of care only which may be reasonably expected from a person of her age, and the jury in considering this must bring in and examine all the circumstances of the casualty."



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## Inventors, Read This.

1. THE AMERICAN RAILROAD JOURNAL gives great prominence to descriptions of such new inventions as relate to its proper class of subjects.

2. Its columns contain at least a notice of every patent granted in the United States upon railroad and kindred inventions. In many cases more than this is desirable, and

3. Its editors invite communications from inventors regarding their inventions.

4. Such communications are treated with a view to their publication, and appear within these columns in all cases when this is desirable.

5. This is the oldest railroad journal in the world, and therefore

6. Inventors cannot do themselves better service in order to advance their interests, than to act upon the foregoing information.

### List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Machinery, Etc.

BEARING DATE OF JANUARY 2, 1883.

- 269,839. Guard-Gate for Cars: Addison Du Bois, New York.
- 269,857. Car-Coupling: John W. Hollins, Cincinnati, Ohio.
- 269,883. Car-Coupling: Edward M. Richardson, Lacomia, N. H., assignor to himself and George L. Mason, same place.
- 269,906. Hand Car: Warren J. Willits, Three Rivers, Mich., assignor to the Sheffield Velocipede Car Company, same place.
- 269,917. Passenger-Car: Edwin Chesterman, Philadelphia, Pa.
- 269,926. Car-Axle: George Farnum, Swampscott, Mass.
- 269,932. Jack for Raising Railroad-Tracks: Jonathan W. Harrison, Ypsilanti, Mich.
- 269,955. Detonating Railroad-Track Signal: Joseph A. Paullin, Mexico, Mo.
- 269,956. Car-Coupling: Charles H. Pelton, Grand Rapids, Mich., assignor of one-third to John A. Wheeler, same place.
- 269,958. Railroad-Switch Signal: Henry L. Pinney, South Windsor, assignor of one-half to Augustus H. Baker, Hartford, Conn.
- 269,963. Car-Door Fastening: John Scanlan, Poughkeepsie, assignor to himself and David Hoit, Albany, N. Y.
- 269,965. Pneumatic Fire-Extinguisher: William Sellers, Philadelphia, Pa.
- 269,978. Relief-Valve for Engine-Cylinders: Jerome Wheelock, Worcester, Mass.
- 269,979. Injector-Condenser: Jerome Wheelock, Worcester, Mass.
- 269,988. Stock-Car: Adolph V. Anderson, Virginia City, Nev.
- 269,995. Car-Axle Box: Jackson R. Baker, Jersey City, N. J., assignor to the National Safety Car Bearing Co., of New York.
- 269,999. Car-Coupling: George W. Bedbury, Portland, Oreg., assignor of one-half to A. E. Berthwick, same place.
- 270,000. Caloric-Engine: Thomas Beesley, Muscatine, Iowa.
- 270,002. Car-Brake: Josiah Pettis, New Albany, Ind.
- 270,009. Straight-Way Valve: Daniel R. Burns, Dayton, Ohio, assignor to himself and Albert L. Jackson, Washington, D. C.
- 270,014. Car-Coupling: Edward S. Carter, Keokuk, Iowa.
- 270,032. Car-Coupling: Frank L. Eager, Palmer, Mass.
- 270,057. Car-Coupling: Robert W. Haines and Alwyn D. Hankerson, Readfield, Me.
- 270,084. Self-Leveling Berth: John H. Laskey, Boston, Mass., assignor of one-half to Isaac F. Dobson, same place.
- 270,092. Combination Implement for Sealing Packages and Railroad Cars: Theodore E. Miller, Houston, Tex.

- 270,103. Car-Coupling: Asa Kenton Owen, Tennessee, Ill.
- 270,119. Nut-Lock: Edward P. Price, Canton, Ohio, assignor of one-half to Dudley Reed, same place.
- 270,124. Nut-Lock: William H. Repass, Martin's Station, assignor of one-half to Alfred Sult, Wytheville, Va.
- 270,125. Watchman's Electric Time-Detector: James E. Richards, Cedar Keys, Fla.
- 270,126. Refrigerating Chamber for Railway Cars, etc.: Job H. Ridgway, Philadelphia, Pa., (Francelia W. Ridgway, Administratrix of said Job H. Ridgway, deceased).
- 270,152. Car-Truck: Ira C. Terry, St. Louis, Mo.
- 270,153. Car-Truck: Ira C. Terry, St. Louis, Mo.
- 270,160. Rotary Steam-Engine: George W. Wade and Joshua M. Wardell, Cadillac, Mich.
- 270,166. Lathe-Stand: Edmund A. Warren, Brooklyn, N. Y., assignor to himself and Thomas J. Moore, same place.
- 270,167. Locomotive and Traction Engine: Francis W. Webb, Crewe, county of Chester, England.
- 270,171. Car-Coupling: William Adams, Salem, Oreg.
- 270,172. Car-Axle-Box Lid: Jackson R. Baker, Jersey City, N. J., assignor to the National Safety Car Bearing Co., of New York.
- 270,174. Brake-Lever: John L. Baker, Racine, Wis., assignor to S. Freeman & Sons, same place.
- 270,186. Electric Vehicle: Joseph R. Finney, Pittsburgh, assignor to himself and Thomas B. Kerr, Allegheny City, Penn.

#### REISSUES.

- 10,265. Railway-Crossing: Henry F. Cox, Altoona, Pa.

BEARING DATE OF JANUARY 9, 1883.

- 270,205. Railroad-Signal: Charles R. Collins, La Fayette, Ind., assignor of one-third to John Schrack, same place.
- 270,209. Automatic Electric Railway: Edward N. Dickerson, Jr., and Charles G. Curtis, New York.
- 270,215. Car-Coupling: Harvey Fraser, Nepesun, Wis.
- 270,236. Automatically Cooling Hot Journals: Franz O. Matthiessen, Irvington, N. Y.
- 270,248. Electric Car-Brake: Albert S. Parsons, Huntington, W. Va.
- 270,252. Fastening for Car-Doors: William Scharnweber, Jefferson, assignor of one-half to Angel Horner, Chicago, Ill.
- 270,262. Car-Axle Box: Peter Sweeney, New York, assignor of one-third to Samuel Morgan, same place.
- 270,283. Label-Holder for Cars: Robert S. Coulter, Swissvale, Pa., assignor of one-half to Andrew C. Coulter, same place.
- 270,300. Car-Brake: Charles S. Gerritson, Waltham, Mass.
- 270,305. Railroad-Signal: Joshua Gray, Medford, Mass.
- 270,306. Car-Wheel Cleaning Device: P. Henry Griffin, Detroit, Mich.
- 270,308. Traction-Engine: Albert S. Hanscom, Moorhead, Minn.
- o. Hand-Car: Edward B. Linsley, Three Rivers, Mich., assignor to the Sheffield Velocipede Car Company, same place.
- 270,330. Locomotive-Tender: Thomas Mulheirn, Providence, R. I.
- 270,349. Car-Spring: Abraham Strom, Mauch Chunk, Pa.
- 270,372. Nut-Lock: Marcus M. Beeman, Syracuse, N. Y.
- 270,374. Car-Coupling: James Billups, Milton, W. Va.
- 270,375. Hand-Car: Joseph D. Billings, Salem, Mass.
- 270,390. Car-Coupling: George A. Cline, Philadelphia, Pa.
- 270,405. Portable Transfer Track: Leo Ehrlich St. Louis, Mo.
- 270,412. Car-Coupling: James P. Gaines, Kuttawa, Ky.
- 270,418. Engine: Perry P. Goodrich, San Francisco, Cal., assignor of one-fourth to Dexter Salisbury, same place.
- 270,421. Car-Axle Box: Williams F. Grassler, Williamsport, Pa.
- 270,423. Spark-Arrester for Locomotives: David Groesbeck, New York, assignor to the Groesbeck & Wright Spark Arrester Company, same place.
- 270,431. Speed-Recorder: John C. Henry, Kansas City, Mo., assignor of one-half to L. W. Towne and P. F. Clinton, same place, and J. L. Barnes, Lawrence Kans.

- 270,440. Car-Brake: Alden D. Kilborn and William F. Smith, Tucson, Ariz.
- 270,445. Spark-Arrester: Franklin W. Levering, Baltimore, Md.
- 270,462. Coupling-Retainer: Walter W. Nevegold, Bristol, Pa.
- 270,480. Railway-Velocipede: Francis W. Randall, Tekonsha, assignor, by direct and mesne assignments, to Wm. E. Hill and George W. Miller, both of Kalamazoo, Mich.
- 270,507. Car-Brake: Samuel H. Terry, Chicago, Ill.
- 270,513. Elevated Railroad and Car: Samuel R. Thompson, Brookline, Mass.
- 270,523. Car-Coupling: Elbridge Webber, Gardiner, Me., assignor of one-half to Charles Gifford, same place.
- 270,528. Air-Brake Pressure Regulator: George Westinghouse, Jr., Pittsburgh, Pa.
- 270,541. Locomotive Ash-Pan: Caleb K. Dodge, Niles, Mich.
- 270,544. Railroad-Switch Bridle: Josiah Gray, Chicago, Ill., assignor to himself, and Westley Holtenbeck, Conrad B. Sheller, and Jacob R. Reed, all of same place.
- 270,552. Compound Steam-Engine: David N. Melvin, Linoleumville, N. Y.
- 270,553. Street-Car Heater: William D. Nelson, New York.

### The Wheeled Scraper.

In the year 1874 was first patented the wheel scraper or self-loading and self-dumping cart, the invention of an experienced contractor, whose only object was to cheapen the work of grading on his own contracts. During the eight years between then and now, three improvements in the scraper have been patented and introduced, and a notice of its peculiarities and capabilities cannot fail to be of service.

The box of the invention is made of one piece of steel bent up in curved lines at the sides and back, attached to an iron frame which suspends it from an iron axle. When loaded, the whole weight is carried on two wheels with broad tires, making a light draft and reducing friction to perhaps the lowest point possible. Its value on hauls of from fifty to sixty feet is found to be superior, and on those of from six hundred to fourteen hundred feet, the economy of its use as compared with that of wagons and shovels and a corps of workmen, receives practical every-day demonstration. The STUBBS-SCHULTZ Patent Wheeled Scraper or Self-Loading and Self-Dumping Cart, by which name it is known, fills any kind of soil in which the drag-scraper will fill, and can be used on embankments of any height. There is no waste attending its use, and it is so durable as to prove very cheap to those who employ it. It saves much labor, is so made as to be used with the same speed as wagons, and is in use, to the number of many thousands, on the railroads of this and other countries. Because it is found that a great amount of earth can be moved in a short time, with little force and expense, by the Stubbs-Schultz scraper, a further knowledge of it is desirable by all who have or will have undertakings in which it could be made available. These should write to the Western Wheel Scraper Company, Mt. Pleasant, Iowa, for further information.

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# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 3.]

NEW YORK, JANUARY 20, 1883.

[WHOLE No. 2,438.—VOL. LVI.]

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matter which the readers of such a paper as this are gratified to find within its columns.

## CONSTRUCTION.

THE railroad is completed from Walla Walla, Washington Territory, to Milton, Oregon.

TRACKLAYING on the new Pittsburgh, Cleveland and Toledo railroad began at Old Forge, Ohio, on the 10th inst.

THE grading on the Mexican Central Railway is completed for over seventy-five miles to the south of the city of Chihuahua.

THE cars in use on the recently opened Toluca (Mexico) tramway were made by the John Stephenson Company of New York.

THE track of the Mexican National Railway has reached Maravatio, in Michoacan. The division will be opened to the public as soon as approved by the government inspector.

A SILVER spike was driven on the 12th inst. on the Mexican Pacific Railway extension, connecting it with the Southern Pacific Railroad, and giving a direct line from San Francisco to New Orleans.

THE proposed railroad from Middletown to Frederick, Md., it is estimated can be built for \$139,000, and at a meeting in Middletown on the 13th inst. the stock subscriptions to the enterprise were reported to be increasing.

THE Philadelphia and Reading Railroad Company is preparing to complete the Allentown Railroad branch road from Kutztown to Auburn, the greater portion of which has been graded. The distance from Kutztown to Auburn is thirteen miles.

THE railroad connection just made at Cornwall completes the track of the New York, West Shore and Buffalo Railroad tracks from Newburgh to the south end of the West Point tunnel, and the Middletown branch from that place to Cornwall is also finished.

THE Maryland Central Railroad contractors are at work on the trestle between Baldwin and the Little Gunpowder, which will be crossed by crib-work, leaving the stone abutments for future construction. The road is graded to Forest Hill, and the contractors say they ex-

pect to have trains running to Belair by May 1.

WE learn from Quebec that the Messrs. Gordon have closed a contract with the International Railway Company for the building of seventeen miles of road beyond Lake Megantic, across the Maine State line, the work to be completed in one year. The sum involved is upward of \$200,000.

THE report of the Engineer of the Pontiac and Pacific Junction Railway Co., reported at the recent meeting of the shareholders that much progress had been made in the work of construction. Fifteen miles of the road have been graded and the rails have been laid for a distance of four miles.

M. DE GOLLADO, inspector and general engineer, of Mexico, now visiting New Laredo, informs the International Railway people that his government is now ready for a speedy construction of the road into Mexico; hence it is presumed that the work of construction, which has been suspended for months, will be resumed at once.

It is stated that the "Seney" syndicate is at present constructing, with "Nickel-Plate" rapidity, the Michigan and Ohio railroad; is completing the Rochester and Pittsburgh; extending the great East Tennessee, Virginia and Georgia system; and, last but not least, surveying a projected new Southern Pacific route through the Indian Territory.

THE Cincinnati and Eastern Railway Company are now considering the extension of their line from Portsmouth through Scioto and Lawrence counties to Petersburg, a town situated in Lawrence county, near the mouth of the Big Sandy. The distance from Portsmouth to Petersburg is thirty miles. With Petersburg as its destination, the company's line would reach 135 miles distance from Cincinnati. A meeting of the company for the purpose of voting upon this extension is to be held on the 5th of February.

THE Rochester and Pittsburgh railroad will be opened into Buffalo early in January and at the same time there will be a through line to Pittsburgh. The original main line of the company was but 107½ miles in length, while the extensions now in progress of construction aggregate 122½ miles. The extensions contemplated aggregate 166 miles, which will make a total line of about 400 miles. The road will

cross Cattaraugus creek on a bridge 540 feet long and 140 feet above water level, the mason work on which is being pushed night and day so as to complete the bridge before it is reached by the track-layers. Several construction parties are at work on different sections of the line. On the main line from Salamanca to Custer City, twenty-one miles, there are thirteen iron bridges and three miles of trestle work.

THE books of the Secretary of State of Indiana show that during the year 1882 twenty-four railroads were incorporated in that State, including consolidations and extensions. The total mileage of the new roads, as estimated by the incorporators, was 1,450 miles. During the year there were built 528 miles of road, indicating the completion of a very large per cent of the roads organized.

THE New York, Lake Erie and Western Railroad is making preparations for opening a line from the anthracite coal regions to connect with the main road at Hawley, Pa. It is proposed to follow the line of the Pennsylvania Coal Company's gravity railroad as closely as possible, and four corps of engineers are now engaged on the survey. The length of the new line is about forty-five miles and will be completed during the present year. The road will be built mainly for coal traffic, but passenger trains will also be run if public necessity so requires. The company has opened engineer headquarters at Scranton, Pa., and is pushing the survey with vigor. Almost the entire line has already been run, and with the exception of some alterations will be ready for building operations in early spring.

## ORGANIZATION.

THE Washington and Georgetown Railroad Company held its annual meeting on the 10th inst., and elected M. G. Lane, L. Whitney, W. R. Riley, H. Hurt, C. C. Glover, Ed. Temple and A. Ross Ray, directors.

THE directors of the Middlesex (Mass.) Railroad Company, elected on the 8th inst., are: Charles E. Powers, John Goldthwait, William H. Kent, Caleb Rand, Nahum Chapin, Nelson Bartlett, George O. Carpenter, Francis Thompson, George H. Norman.

THE directors of the Norfolk and Western Railroad Company, elected on the 10th inst.,



are: George F. Tyler, president; C. H. Clarke, F. J. Kimball, Edw. A. Rollins, John C. Bullitt, James P. Scott, Wm. B. Isham, Geo. C. Clarke, R. B. Minturn, Upton L. Boyce, John B. Whitehead, J. Arthur Johnson and Charles Hacker.

THE old board of directors of the Baltimore City Passenger Railway Co. were re-elected on the 10th inst. as follows: Oden Bowie, Gabriel D. Clark, Austin Jenkins, John Bolgiano, Wesley Ricketts, Jackson Holland and Wesley A. Tucker.

THE directors of the Worcester and Nashua Railroad Company, elected on the 12th inst., are: Charles S. Turner, Stephen Salisbury, F. H. Kinnicutt, F. H. Dewey, J. Edwin Smith, E. B. Stoddard, of Worcester; Charles Holman, of Nashua; and H. N. Bigelow, of Clinton.

THE shareholders of the Pontiac and Pacific Junction Company, at their meeting in Toronto on the 10th inst., re-elected the old board of directors, with the addition of Hon. J. G. Chapman and G. C. Butler. The officers are: President, the Hon. L. R. Church; vice-president, W. D. McAllister, M.P.P.; secretary, W. Conroy; chief engineer, Mr. Patterson.

THE Brattleboro' and Bennington Railroad Company was organized on the 9th inst., by the election of Edward Crosby, W. W. Lynde, J. J. Estey, Kittredge Haskins, of Brattleboro'; J. H. Kidder and O. E. Butterfield, of Wilmington; H. G. Porter and W. P. Jones, of Whitingham; and A. J. Tucker, of Halifax, as directors. S. B. Barnard, L. K. Fuller and N. L. Stetson, auditors; F. W. Childs, clerk.

THE following gentlemen have been elected directors of the Norwich and Worcester Railroad Company: Francis H. Dewey, Charles W. Smith, Edward L. Davis and Thomas B. Eaton, of Worcester; John L. Slater, of Norwich; William Bayard Cutting, of New York; and William G. Weld, of Newport, R. I. F. H. Dewey was elected president; George L. Perkins, treasurer; E. T. Clapp, clerk; and P. St. M. Andrews, managing agent, under the lease.

At the annual meeting of the stockholders of the New York, New Haven and Hartford Railroad Company, held at New Haven, Conn., on the 10th inst., the following members of the board were re-elected: George H. Watrous, E. M. Reed, W. D. Bishop, Wilson G. Hunt, George N. Miller, Chester W. Chapin, A. R. Van Nest, H. C. Robinson, E. H. Trowbridge, Nathaniel Wheeler, C. M. Pond, Augustus Schell and William H. Vanderbilt.

THE stockholders of the Baltimore and Cumberland Valley Railroad held their annual meeting at Chambersburg, Penn., on the 8th inst., and elected the following board of directors: William Chambers, John Culbertson, of Chambersburg; Messrs. McPherson and Cole, of Shippensburg; J. M. Hood, Alex. Rieman, D. J. Foley, C. Devries and C. W. Humrichouse, of Maryland. The officers are: President, Judge Wills, of Gettysburg; secretary, Mr. McMaccom, of Chambersburg; treasurer, D. J. Foley, of Baltimore.

At the annual meeting of the stockholders of the Columbus, Hocking Valley and Toledo Railroad Co., held at Columbus, Ohio, on the 10th

inst., the old board of directors was re-elected, viz: M. M. Greene, S. Burke, W. J. McKinnie, Chas. Hicox, Charles G. Hicox, C. H. Andrews, and J. W. Ellis. The Board organized by re-electing M. M. Greene, president; S. Burke, vice-president; W. M. Greene, secretary, and F. H. Medary, treasurer.

THE stockholders of the West Chester and Philadelphia Railroad Company, which is controlled by the Pennsylvania railroad Company, met on the 15th inst. and elected the following directors: John P. Green, John M. Kennely, Wistar Morris, Henry M. Phillips, G. B. Roberts, N. Parker Shortridge and J. Price Wetherill. The board subsequently elected John P. Green president.

THE stockholders of the Cincinnati, New Orleans and Texas Pacific Railroad, Cincinnati Southern division, met on the 15th inst., and elected P. T. Gaff, Briggs Swift, A. A. Goodman, Otto Bloch, John Scott, Edgar M. Johnson and Alex. McDonald directors for the ensuing year. The new board organized by the election of John Scott for president and general manager, Edgar M. Johnson general counsel, and H. H. Tatem secretary and treasurer.

THE directors of the Smyrna and Delaware Bay Railroad Company, elected at the annual meeting of the stockholders in Smyrna, Del., on the 10th inst., are as follows: Robert W. De Forest, Charles W. Gould, John F. Bingham, New York; H. C. Douglass, John H. Hoffecker, N. F. Wilds, Smyrna; John R. Nicholson, Dover. The officers are: John F. Bingham, president; Robert W. De Forest, secretary; H. C. Douglass, treasurer; John R. Nicholson, attorney; L. D. Bruyn, engineer.

At the annual meeting of the stockholders of the New York, West Shore and Buffalo Railway Company the following named gentlemen were elected directors for the ensuing year: Horace Porter, Henry Villard, John W. Ellis, Geo. M. Pullman, C. F. Woerishoffer, R. T. Wilson, H. Victor Newcomb, H. C. McHarg, Frederick Billings, Charles Lanier, John J. McCook, Theodore Houston and Charles Paine. The officers are: President, Horace Porter; vice-president, Theodore Houston; treasurer, F. E. Worcester; secretary, John L. Nesbitt.

At a meeting of the Chicago and Western Indiana Railway Company, on the 12th inst., the following gentlemen were elected directors: Robert Harris, vice-president New York, Lake Erie and Western; A. L. Hopkins, first vice-president Wabash, St. Louis and Pacific; S. R. Callaway, general manager Chicago and Grand Trunk; D. J. Mackey, vice-president Chicago and Eastern Illinois; E. B. Stahlman, Traffic Manager Louisville, New Albany and Chicago. S. R. Callaway was elected president and Andrew Crawford vice-president. It was agreed that the office of president shall alternate from year to year between the officers of the five companies owning the Chicago and Western Indiana stock.

It has been facetiously stated that the only sure place to find "peace, plenty and prosperity" is in the dictionary. Each however may be promoted by the judicious use of Esterbrook Pens.

### The Port of Vera Cruz.

THE port of Vera Cruz has enjoyed the distinction of being the chief port of entry to Mexico ever since Cortez landed there. The days of its supremacy however seem drawing to a close, and unless very energetic measures be adopted by the local authorities, the end may come sooner than has been anticipated. The terrors of that open roadstead, especially during the season of "northers," have long been known to travelers, but as no other entrance opened into the country save a weary and dangerous overland journey of many hundreds of miles, visitors and shippers to Mexico were compelled to brave its dangers and inconveniences. The completion of the great systems of railroads stretching to the northern boundary warned those interested that Vera Cruz could not hope to retain her importance as a port of entry much longer, since both European and American imports would reach Mexico more conveniently by the new railroads. Remote as that danger seemed but a short time ago, the rapid work done on the railroads is fast drawing it nearer, and had the effect of arousing the State authorities to the importance of adopting measures for improving the harbor and thus holding at least part of the trade and shipping which have made Vera Cruz important. The resolutions were adopted energetically, plans were secured for the proposed improvement, and a liberal subsidy was granted for the work. But there the matter practically ended, and beyond some general preparatory work, many months of valuable time have been wasted without definite progress, while "Northers" continue to blow, ships are tossed and wrecked in full view of the city, and the avenues of commerce are blocked some times for many days. Then came criticisms of the proposed plans of improvement, and, at what must seem a late day, it is discovered that these are not only inefficient, but positively damaging.

While these unfortunate combinations were working to the detriment of Vera Cruz, a new and most serious danger has taken shape and now presents itself in organized force. The Mexican Southern Railroad had secured a large tract of land at Anton Lizardo, a point but a short distance below Vera Cruz, but exempt from many of the inconveniences of the latter port. Careful surveys proved the fact that with a reasonable outlay of money, a good and secure harbor could be made there, and the company announced its determination to found there a city and port of entry connecting directly with its railroad system. The delay, which had somewhat obscured these prospects, was suddenly ended a few days ago by the announcement that a corps of engineers had reached the spot, were surveying the site of the new city, and that work would be pushed at once.

Vera Cruz has received this announcement with well-founded alarm. There can be no question that the new port will prove a powerful if not a crushing rival, unless the old city push her harbor improvements to immediate completion. The new work is in energetic hands. Capital sufficient for all demand has been secured, and the men in charge of the new

work come from a land where the building of cities is no greater task than the building of railroads insuring their success. The experiences repeated hundreds of times in the western States of the American Union prove that liberal inducements to emigrants, cheap homesteads in a new city with railroad and other facilities, will in a short time build up a flourishing city and an energetic community at Anton Lizardo. The very small deviation to the south necessary to reach the new port, will be more than compensated by the greater security and facilities offered for shipping, and with railroads extending from the port to the interior, the new city will threaten a complete monopoly of the trade now enjoyed by the old port.

There is no reason why this should come to pass. The import and export trade of Mexico is growing daily, and will assume yet larger proportions in the future. Hence there will be trade enough for both ports if these offer equal advantages. Vera Cruz enjoys the advantage of established trade and conditions, which her younger rival cannot hope to secure for some time yet. But if she be content that the latter shall alone offer inducements to the shipping trade while she contents herself with *proposed* improvements, she will suffer in the competition and sink into insignificance. Let her authorities arouse from their indifference and either push the proposed work to immediate completion, or, if more desirable, entrust it to other hands who will push it energetically. These are not wanting, as it is stated that the English railway company operating from Vera Cruz to this city are willing to employ part of their large resources in this work. They are most deeply interested, for the decay of the Vera Cruz port of entry will be the threatened ruin of the highway which has made them wealthy as carriers to and from that port. As self-interest would make them energetic, we hope the work of harbor improvement may be entrusted to them. Then instead of a decaying port and a ruined city, we will see Vera Cruz *heroically* clothing herself with renewed vitality and under the influence of active competition attaining a vitality and progress unknown during her long period of unopposed supremacy.—*Mexican Financier*.

#### Railroads of Massachusetts.

THE Fourteenth Annual Report of the Railroad Commissioners of Massachusetts, which was submitted to the Legislature on the 15th inst., shows that the mileage of roads in the State was increased twenty-one and one-half miles during the year ending September 30, 1882. The total mileage of main line and branches is 2,778 miles, of which 750 miles is double-track. Returns were received from 67 corporations, an increase of two. The aggregate capital stock is \$122,976,262.26, an increase of \$820,648.14. The gross debt, less cash assets, \$71,913,806, an increase of \$7,062,915.24; on the other hand, the cash assets of all companies of the State have increased to the amount of \$2,848,006.23. The total income for the year was \$60,046,370.20, an increase of \$3,081,974.27, or 8.01 per cent. The total expenses,

including rents paid, were \$29,944,167.15, an increase of \$2,881,522.92. The net income was \$10,902,202.95, being an increase of \$200,451.35. Sixty-six companies, with a permanent investment of \$198,956,600, had a net income of 6.4 per cent. The Troy and Greenfield Company is not included in these. The total amount of dividends paid was \$6,271,139.86, a decrease from the previous year \$16,726.96. Of the 66 corporations, 36 paid dividends varying from 2 to 10 per cent. The number of passengers carried was 55,868,694. The average fare is 2 cents a mile, a reduction of one-fifth of 1 cent. During the year 331 miles of steel rails were laid, making a total of 2,466 miles.

The following additions have been made to the equipment of the roads: Locomotives, 61; passenger cars, 90; mail and baggage cars, 31; freight and miscellaneous cars, 1,880. The number of persons regularly employed is 27,403, an increase of 880; the whole number of persons employed during the year was 30,904. The number of persons injured was 414, or one less than in the previous year; of this number only 27 were passengers, against 42 in 1881. The number of killed was 163, against 184 the previous year. The number of employes injured, not fatally, was 142; the number killed, 56. The corresponding figures for 1880-81 were 128 and 72. The number of trespassers killed during the year was 75, and the number of injured, 57. Among the number killed seven are reported as suicides. The number injured at highway crossings was 54, of whom 21 were killed. The amount of damages paid in 10 years by eight roads of standard gauges terminating in Boston was \$1,211,587.10 or an average of more than \$120,000 annually. This was exclusive of all damage to freight or rolling-stock and of all legal expenses attending suits. The report also contains extended reference to several subjects of more or less importance, such as terminal facilities, legislation concerning railroads, freight discrimination, relief societies, fencing, color blindness, the Exigency act, signals and railroad bonds.

The report also shows that returns were received from 30 street railways, with an aggregate capital stock of \$7,001,580, or an increase of \$347,830. The gross debt amounts to \$4,412,172, an increase of \$678,680 since the last report. The total stock in debt now amounts to \$11,413,752. The average rate of dividend on the total amount of capital stock was 6.5 per cent, and the net earnings amounted to 5.4 per cent on the aggregate of the capital stock and gross debt. The whole length of track, including branches and sidings, amounts to 273.085 miles, being an increase of 75.69 miles, and an average of 9.1 miles for each road. The number of passengers carried was 83,923,577, being an increase of 8,759,828 over the number carried during the preceding year. The number of passengers carried on the street railways exceeded the number carried on the steam roads by 28,054,883. The gross income was \$4,494,957.65, an increase of \$461,712.77. There was a decrease of net income amounting to \$84,052.31, and a decrease of dividends paid amounting to \$464,900. The number of persons employed on street railways was 3,501, being an increase of 349 over last

year. The number of accidents reported was 49, of which 6 were fatal. The number of persons injured during the previous year was 34, 7 of whom were killed.

#### Pacific Coast Railroads.

THE San Francisco *Bulletin* says that "the year just closed has been remarkable for the progress made in the construction of railroads, which, for lack of a more definite term, may be designated as Pacific coast railroads. It is now evident that the entire line of the Northern Pacific Railroad between Lake Superior and Puget Sound will be completed by the close of this present year. The mileage now completed between these two great bodies of water is 1,485 miles. The line on the east is constructed from Superior to Bozeman, a distance of 1,049 miles. On the west the track is completed to a point near the mouth of the Missoula River, leaving hardly more than 300 miles of road to be constructed to fill this gap between Lake Superior and Puget Sound. In this estimate no note is made of several branches and side divisions. Practically the Northern Pacific Railroad does not begin nor end on Lake Superior. That was a convenient point made in the organization of the original company. The branch on the western end from Wallula to Portland is 210 miles long.

"The Atchison, Topeka and Santa Fé Railroad Company have practically completed their railroad from the Missouri River to the Gulf of California, and some weeks ago this company ran a train from the 'river to the sea,' a distance of 1,675 miles to the terminus at Guaymas. It is ten years since that road touched the eastern side of what was then Colorado Territory, and it did not look then as if the road would ever cross that Territory. But the extraordinary mining development in Colorado, New Mexico, and Arizona stimulated railroad enterprises, the result of which was that before the close of 1882 this railroad company had reached the waters of the Pacific.

"The Southern Pacific during the past year practically completed a line of railroad from San Francisco to New Orleans. The line between these two points—the waters of the Pacific and the Gulf of Mexico, is designated by Eastern men as the 'Sunset route.' On the Gulf end some short roads already constructed were consolidated or brought under the control of the Southern Pacific Company. The entire length from San Francisco to New Orleans is 2,470 miles. From San Francisco to Galveston the distance is about 2,150 miles. This road, with its connections, is now open for traffic, and it is already intimated that immigrants will be brought from Liverpool to New Orleans and over this route at \$60 each. Even this cost may yet be further reduced.

"The Carson and Colorado Railroad is now completed for a distance of 192 miles, reaching Benton, in Mono county, with 100 miles beyond so far advanced that the addition will be open for traffic some time next summer. It extends all the way through a mineral belt, and promises to be one of the most important and profitable narrow-gauge railroads in the United States.

"The California and Oregon Railroad, a direct line between San Francisco and Portland, has heretofore made slow progress. About 35 miles were completed on the Oregon end in 1882. This was very heavy work, and equal to more than a hundred miles of railway construction over a moderately level country. Work is now vigorously prosecuted on the California end of the road from Redding north; and there is every prospect that the entire road will be completed by the end of the year.



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## PRINCIPAL CONTENTS.

Construction.....	49
Organization .....	49
The Port of Vera Cruz.....	50
Railroads of Massachusetts.....	51
Pacific Coast Railroads.....	51
EDITORIAL:—	
A Working Congress.....	52
Railroad Medical Service.....	53
The Use of Inferior Material the Cause of Railroad Accidents.....	54
Starting the Iron Mill.....	54
Our Canadian Letter.....	55
Stock Exchanges and Money Market.....	56-58
Railroad and Canal Dividend Statement.....	60
Railroad Earnings—Monthly.....	62
Inventors and Patents .....	64
The Miller Padlock .....	64
The Patent Business Overdone.....	66
List of Master Car Builders.....	68
A Steam Man.....	70
Overworking Railroad Employees, etc.....	72

THE reader of the AMERICAN RAILROAD  
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## A WORKING CONGRESS.

CONGRESS had laid out for it much impor-  
tant work during the short session between  
the first Monday in December and the 4th day  
of March, and having heeded the admonition of  
the November elections, is making commend-  
able headway with most of it. It is manifest  
that more legislation of a more beneficent  
kind will be put through within the eighty or  
ninety working days of the short session than  
has been carried during the longest of the al-  
ternate sessions for many years. The query  
arises whether or no it would not be well for  
the public benefit to limit all the sessions of  
Congress within a hundred days. The experi-  
ment has been tried in some States without  
serious dissatisfaction appearing. The sessions  
whose terms are not defined are usually given  
up to political wrangling, to the effort to make  
party capital, one at the expense of the other,  
while the real interests for which Congress  
should be convened are postponed or neglected.  
As was long ago complained, the bane of our  
Legislatures—National as well as State—is too  
much talk. This has been found to be true of  
the English Parliament, where oratory is not  
cultivated as a desideratum and the "closure"  
rule has recently been adopted.

The paramount subject for consideration at  
this session of Congress is the reduction of  
taxation. This is the interpretation of the

overwhelming vote of November. The Ways  
and Means Committee has been made up, it  
is said, at the suggestion of Mr. ROBESON,  
strongly in the interest of protection.  
Mr. KELLEY, the Chairman, widely known  
by the sobriquet "Pig Iron Kelley," has  
been unceasing in his endeavors to serve  
the advocates of protection in season and out  
of season. The friends of American manu-  
facturers may fairly claim to be suffering from  
the zeal of their champions. The Ways and  
Means Committee seem willing to throw off the  
entire tax from spirituous liquors and tobacco,  
if thereby they can only hold on to the exist-  
ing tariff law. This is a misfortune. The  
tariff on importations might be judiciously  
amended and altered in places, so as to still  
leave a comfortable margin of protection for  
American labor. The duty on steel rails, for  
instance, might with advantage be cut down to  
\$10 per ton; the Committee is unwilling to go  
below \$14.40. So of metals, sugars, and other  
manufactured articles, the Committee in stand-  
ing for the highest possible rate, leaves the  
whole subject in danger of being torn to pieces  
by the next Congress; for the paltry advantage  
of a single year of higher duties, the zealots are  
willing to risk the future.

The session will not be allowed to pass with-  
out a wholesale reduction of the war taxes,  
known as Internal Revenue, which will be a  
sensible relief to the business community.  
The commercial treaties with Mexico, the Sand-  
wich Islands and Canada are likely to receive  
some consideration also. These are important,  
and the basis suggested by the Board of Trade,  
and by the Commissioners appointed to nego-  
tiate them, that articles which can be placed  
upon the free list should be adopted first, and  
after that the discussion of articles of general  
use and exchange, one after another, until it is  
determined what can be made the subject of  
free interchange. These three countries are  
our immediate neighbors, and it should be a  
cardinal policy of the United States to cultivate  
increasing friendly relations with them.

Senator INGALLS has introduced a bill for the  
creation of a Commission to consist of seven  
members appointed by the President. PROCTOR  
NORTON's resolution to suspend the issue of Land  
Patents to the Northern Pacific Railroad Com-  
pany, having failed in Committee will hardly be  
likely to prevail. The Pacific Railroad Com-  
mittee has reported a bill to bring the Kansas  
Pacific and the other small Pacific roads under  
the provisions of the Thurman law; also a bill  
authorizing the consolidation of the Southern  
Pacific and other roads extending between San  
Francisco and New Orleans. The parties who  
recently built the "Nickel Plate" road, and

succeeded in selling it to Mr. VANDERBILT, have, it seems, done so well that they are now ready to build a road from Fort Smith to Albuquerque, as an extension of their East Tennessee, Virginia and Georgia system, paralleling the Atlantic and Pacific Railroad. It is hardly likely that any such scheme will prevail, as the ground is already covered by two very strong parties—the St. Louis and San Francisco, and the Atchison, Topeka and Santa Fé, and Congress will not be induced to lend itself to such a transparent speculation.

### RAILROAD MEDICAL SERVICE.

BY S. S. HERRICK, M. D.

SECRETARY OF BOARD OF HEALTH, STATE OF LOUISIANA.

SAXONY.

THROUGH courtesy of the U. S. Consul at Leipsic, J. E. Montgomery, Esq., I have received the printed regulations of the Medical Department of the Royal Saxon Railroad Company, of which the following is an abstract.

It is premised that a distinction is made between employes under permanent engagement, and those engaged by the week or day. Apparently this has reference to the length of time during which the individual may be entitled to relief, giving preference to the permanently employed.

Relief is granted for sickness or injury contracted in the service of the company, unless it is shown that it occurred from express violation of established rules or of special orders. Even then exception may be made, under peculiar circumstances. In case of sickness, it is not necessary to show that it was positively caused by the performance of duty; but when it can be traced only remotely to the man's proper occupation, a portion of the expense is assumed by the company, according to circumstances. When it clearly appears that the illness or injury grew directly out of duty performed in service of the company, then the whole expense is borne by the latter.

In general those receiving an annual salary above 2,250 marks (about \$550) are not entitled to medical relief, but exception may be made, under peculiar circumstances, by order of the administration.

Medical or surgical attendance, at the company's expense, must be rendered by medical men under engagement to render such service, or in hospitals designated by the management. Exception may be made in special cases. Physicians residing along the lines are engaged to attend cases at a fixed tariff of charges.

In case of death resulting from an injury, the company will pay, wholly or partially, according to circumstances, the expenses of the burial; but these must be moderate. This applies both to those permanently and temporarily employed.

When a man, employed by the week or day, is injured in the service of the company, the expense of medical attendance and other necessary expenses until he is fit for duty, are defrayed by the company.

In case of sickness, of those permanently or temporarily employed, assistance is rendered according to circumstances, not exceeding one-half the daily pay, and for a period not exceeding one month; but exception may be made in special cases for extension of relief.

It is expressly stated, that the foregoing provisions are to be regarded as a voluntary contribution by the company, and not to be demanded as a lawful right by the employe. Directions are given for annual reports of cases treated, but these need not be detailed here.

As previously intimated, railroad physicians of the Royal Saxon Company receive no salaries, but are paid for services actually rendered according to a fixed tariff, and can be discharged at the pleasure of the management. Their duties are:—

1. To render medical and surgical service to those who are entitled to the same under the regulations, as they are requested.

2. To examine those who apply for employment, with reference to their bodily fitness for the particular service which they desire to enter.

Physicians are expected to inform themselves upon the particular requirements of different branches of service, in order to decide intelligently upon the fitness of any candidate applying for employment. Blanks for these examinations are filled up and sent under seal to the management. The examination fee is paid by the applicant, unless he be rejected, in which case it is paid by the company.

The fees allowed for professional service seem ridiculously low, by the American standard. For the first visit within two and one-half kilometres (one and one-half miles) the fee is three-fourths of a mark (about eighteen cents); for each subsequent visit, one-half a mark (twelve and one-half cents). For night visits, double fees. For examination of an applicant for employment, three marks are allowed (seventy-five cents). Surgical services and other medical attendance are recompensed at the lowest legal rates.

A report of each case treated is made by the physician, covering the following points:—

1. Date of application for attendance.
2. Name and occupation of patient.
3. Residence.
4. Under which head of the regulations of Nov. 1, 1871, is he recommended for relief?
5. Circumstances of patient, term of service, family, etc.
6. Nature of illness or injury, and alleged cause of same.
7. Estimate of length of convalescence.
8. When the patient was injured or taken sick.

9. Summary of expense incurred for attendance, medicines, etc.

The examination of a candidate embraces the following points:—

1. The diseases which the individual acknowledges himself to have experienced. Whether he has had any chronic skin affection, fracture of bones, gout, epilepsy, spitting or vomiting of blood.
2. Condition of his bony structure.
3. Bodily nourishment.
4. Muscular development.

5. Perfection of hearing.

6. Sight, with reference to acuteness for near and distant vision, perception of colors, and whether there be any signs of previous eye-trouble.

7. Presence of skin affection, or trace of former affection. Appearance of varicose ulcers, present or past.

8. Whether any malformation of neck or chest is discernible.

9. Condition of respiratory organs, with special reference to tuberculosis.

10. Condition of circulating system, with special reference to varicose veins and aneurism.

11. Condition of the abdominal organs.

12. Presence of hydrocele, varicocela or hernia. If hernia be present, whether thoroughly controlled by a truss.

13. Whether the individual has had small-pox, or is effectually vaccinated.

14. Whether the man be temperate or not; whether his constitution be impaired or not by previous excesses of any kind.

15. The fitness of the applicant for any particular position, and what positions he may be physically unfit to fill.

The regulations make no mention of medical attendance on the families of employes, nor of any benevolent associations among them for mutual relief in case of sickness, injury or death. Nothing is said of contribution from the wages of employes for the support of the medical service. It is probable that the scale of wages is so low already, that it would not bear diminution for any purpose, and it is besides apparent that the policy of the company is to acknowledge no responsibility, except in case of accidental injury, and to grant no more aid than may be necessary or politic to avoid expense of legal prosecution.

Nothing is said of relief-chests for stations or passenger trains, nor of hospitals administered by the company. It is therefore to be presumed that they are wanting.

Though Saxony now forms an integral portion of the great German empire, it was until recently a small kingdom, with an area but little larger than that of the State of Connecticut, and considerably less than that of Massachusetts. The present regulations antedate the consolidation of the empire, and were adapted to its diminutive territory. The inferiority of the railway medical service of Holland and Saxony to that of France appears to bear definite relation to territorial extent, which governs the length of the lines, the number of men, the capital invested, and to a great extent the development of every branch of service.

[TO BE CONTINUED.]

THE desire for tramways is rapidly spreading in Bengal, and numerous applications for their construction or encouragement are being received at the Bengal office. One of these is said to be a tramway from Havras to Amtah, a village on the Damuda River, twenty-two miles distant. We understand that figures have been prepared to show that such a line would pay, and a Calcutta paper believes it is under the consideration of the local government.



## The Use of Inferior Material the Cause of Railroad Accidents.

BY W. S. HUNTINGTON.

It is within the memory of thousands who are now in the prime of life that it was the aim of manufacturers to produce articles of a superior quality in their line. To enable them to do this it was necessary for them to procure the best material in the market for their purpose. This rendered it necessary for the producers and those who furnished material to handle none but such as would bear inspection in order to do a living business. In those days reputation was as good as cash; and although an individual or a company might go into business with unlimited funds, unless they built up a reputation for turning out honest goods they might safely count on a failure. But these things have sadly changed; and the strife among manufacturers is not who shall produce articles of the greatest excellence, but who can turn out the cheapest goods regardless of quality; and these latter have full order-books while the honest manufacturers find their occupation gone.

Perhaps it would be unfair to say that it is the manufacturers who have brought about this state of affairs, inasmuch as the dealers encouraged producers in their dishonesty by purchasing inferior articles; yet, if the former had adhered to strictly honest practices, they would not have opened the way to rascality on the part of dealers. The result of these crooked practices was that consumers, who were generally of the laboring classes, were forced to pay *good prices for poor articles*, and this was only an easy way for the wealthy manufacturer to rob the poor mechanic. So far, this was only a matter of dollars and cents; but when the rascality extended into railroad supplies of the "shoddy" order, it became a matter of life and death as well. Ordinarily, if a tool or other article failed on account of being made of "shoddy" material the only sufferer was the consumer, who lost time and the money required for renewals or repairs; but in railway practice not only the owners but the public at large are sufferers, and frequently mourners, as a result of wicked speculation on the part of railway officials. It would be unreasonable to suppose that our enormous railway traffic could be managed so as to prevent accidents at all times; but it is well known that a large proportion of railway disasters might be prevented by more thorough management and a strict regard for honesty by those who furnish supplies. In these days of universal disregard for anything but business and the profits resulting therefrom we must submit to more or less speculative abuse. This we can do with tolerable grace under ordinary circumstances; but when it endangers our lives and property it is time to revolt. In instances of a mild character remonstrance might avail; but when a railway official who is an owner, solely or in part, of an establishment for the manufacture of railway supplies which are known to be of an inferior quality uses them on his road, or sells them to others to use, justice should be meted out to him without stint. It is easy to *prescribe* a remedy for this growing evil, but like giving

a child castor oil, it is not so easy to administer it. It may not seem in accordance with the spirit of our laws to interfere with the legitimate business of an individual or corporation, but when the public suffer that speculators may thrive, and our lives and property are destroyed by these unprincipled, heartless men, it is time for the government authorities to act in the premises. No managing railway officer should be allowed to own an interest in any establishment furnishing railway supplies, unless they turn out goods of the best quality, and this would be a matter of uncertainty unless the goods were inspected by experts appointed by the authorities for the purpose. This would in a measure prevent the placing of inferior supplies on the market. There are comparatively few who have any idea of the extent of ownership and control of railway managers in establishments that handle supplies, either as manufacturers or dealers. The monthly reports of railway accidents and their causes reveal the fact that an immense quantity of poor material finds its way into permanent way and equipment, and in many instances it is furnished by establishments in which railway officials are interested, where they make enormous profits. If an unlucky engineer causes the death of a person he is at once arrested and, on trial, convicted of manslaughter, and punished accordingly; but his employers may kill, injure and destroy through the means of their speculation to an unlimited extent, and it is all charged to Providence. If Congress should take the matter in hand they would soon be brought to understand that our lives are not to be bartered for cast iron or "pot metal" to be used in place of something more substantial. Good, honest inspection of supplies would not only save life and property but would prevent loss to railway owners by the false economy of managers and agents who may be honest, but consider it economy to "get the cheapest." By making it unlawful for any railway company to purchase or use any material not bearing the stamp of a government inspector, purchasing agents and managers would be relieved of a great responsibility; and in cases where these gentlemen are troubled with "twinges of conscience," they would also be relieved of much soul-harrowing. The enactment and enforcement of such a law would also relieve manufacturers of much of the trouble they experience by reason of their dishonesty. When a railway official knowingly permits material of inferior quality to be used in construction or repairs he commits a crime, and should be punished therefor, and the severity of his punishment should be proportionate to the results of his mismanagement; but that would not save life and property. It would be too much like locking the barn after the horse is stolen, and it would seem that the only safe remedy is to *make these men honest*, "whether they will or no," by depriving them of all opportunities to be otherwise. Congress might do a good thing by investigating this matter, and as it is the duty of that body to protect the lives and property of American citizens by all practical means, let us hope for immediate action in the premises.

ADVERTISE in the Railroad Journal.

## Starting the Iron Mill.

BY J. WILLIAM POPE.

THE furnaces with mouths all closed,  
The engine still, save as it breathed,  
The sturdy men with arms all bare,  
And tongs in hand, the hammer down,  
The rolls in waiting—thus the mill  
Appeared until the word to start  
Gave pulses to the lifeless heart.

The engineer the throttle turned;  
Then life began, the rolls fast whirled,  
And quick a furnace was agape;  
Then came a flash, a ruddy beam,  
Which fell on every object there;  
The roof and floor, though rough and cold,  
Appeared as if ablaze with gold.

Out came a fizzing lump of fire,  
Which ran as if it living was,  
And leaped beneath the mighty drop,  
Which sent a shower of fiery rain  
Among the men, who active were,  
And looked like demons teasing souls,  
Between the hammer and the rolls.

Then to the rolls the battered bloom  
Was quickly brought, and grew in length,  
As back and forth it steady went,  
Still glowing like the summer's sun,  
'Mid clatter, whirl, and thump, and roll,  
Which music was as gods might hear,  
And pleasing to the workman's ear.

Let's see what men, perhaps, may do  
With such a bar: they'll make a plow,  
A sickle, scythe, a gun, a sword,  
A telescope, a huge bell's tongue,  
A string for lyre, a compass, square,  
A rod to guide the lightning's fire,  
A sheet of tin, a wagon tire.  
The sweat and sinew 'twill require!

And who will say 'twas not worth while  
To start the mill? How many mouths  
May be well fed and backs well clothed?  
How much of trade throughout the world  
It may give life? and idle hands  
It may employ in other lands?

## South Carolina Railroad Commission.

THE Railroad Commission of South Carolina is now complete. It consists of ex-Gov. Bonham, ex-Gov. Jeter, and Capt. Legare J. Walker. Of these gentlemen the Charleston *News* of 6th inst. says: Commissioner Bonham has been in office as Railroad Commissioner several years, and has, therefore, an intimate acquaintance with the working of the railroad companies in the State, and with the complaints and wants of the people. Commissioner Jeter was the president of a local railroad for a considerable time. Commissioner Walker is a Charleston merchant of the highest standing, who was not a candidate for the appointment and who accepts it only as he accepted other and earlier calls which came to him in the guise of duty. The commission as now completed is strong in the best sense, for there is no man upon it who, under any circumstances, will be unmindful of his official obligations. From such a commission the railway companies have nothing whatever to fear, if the rates which they charge are fair and reasonable, and if their business is conducted with a proper regard for the public interest as well as for the profit of the companies. The public can rest assured that the commission will be absolutely free from prejudice or bias, and will do just so much as is demanded by their conception of the public requirements.

## CANADIAN DEPARTMENT.

MR. JAMES J. WHITE, Ottawa, Canada, writer of "Our Canadian Letter," acts as agent for the AMERICAN RAILROAD JOURNAL COMPANY, in Canada. He is authorized to receive, in behalf of the company, subscriptions and advertisements for this journal; also news of the character which he can utilize in the preparation of his Letter, or send to us for use elsewhere within these columns. He respectfully invites information concerning Railroad matters generally, Mining, Banking, Finance and Manufactures.

## OUR CANADIAN LETTER.

[From our Special Correspondent.]

## THE OTTAWA MINING SECTION—RAILROAD AND OTHER NOTES.

## THE OTTAWA MINING SECTION.

LARGE deposits of kaolin have recently been discovered in this section. Some quantities have been carefully tested, and show good results both in the white and brown variety. The properties where these deposits are found are not as yet convenient to transportation, but the rapidity with which railway enterprises are being pushed will soon bring this valuable mineral in close connection with the markets at home and abroad.

## PHOSPHATE.

A great deal of attention is now being directed to the mining of apatite, commonly called phosphate, and capitalists are making investments in phosphate lands in this section to such an extent that before long it will be a leading industry. The output of phosphate for the ensuing year is estimated at a very large figure, and from all that we can learn we strongly recommend this class of property as a very profitable investment. No costly plant is required in the working of phosphate property, and but a limited amount of capital is necessary for the successful operation of a mine.

## GRAPHITE.

This mineral is found in large quantities in this section, and is pronounced superior in quality to that found in the island of Ceylon, whose mines supply largely the markets of this continent. The cost of production is comparatively small, and the material can be mined, treated and delivered at the different points of consumption, both in America and Europe, at a price fifty per cent cheaper than that brought from Ceylon, at the same time giving a better quality.

## RAILROAD AND OTHER NOTES.

The Brighton, Warkworth and Norwood Railway Company have applied to the Ontario Government for a charter, also the Thunder Bay Colonization Railway Company.

The contest between the Grand Trunk and the Toronto, Grey and Bruce railway companies, has been decided against the former, and the latter will remain an independent line, at least for the present.

All of the great northwest freight over the Grand Trunk for the Atlantic Coast, will go over the Central Vermont and its connecting roads at Boston.

One and one-half miles of rail is laid over the St. Lawrence from Montreal to Longueuil.

Work will commence this week on the Erie and Huron Railway.

A meeting of the Montreal Commercial Exchange was held Jan. 10. According to the annual report there was an increase in the flour receipts in 1882 of nearly five per cent over 1881, and an increase in shipment of nearly 23 per cent. There was an increase of 9 per cent in wheat, and 5½ per cent in shipment. There was a decrease of 81 per cent in receipts of corn, and in shipment of 79 per cent. The decrease in butter receipts was 12 per cent and in shipment of 25 per cent. In cheese an increase of 14 per cent and in shipments of 37 per cent. Attention was called to the necessity of reviving the call board, and the abolition of the canal tolls was urgently advocated. After a long discussion on the import duty on grain, the feeling of the meeting was that it lessened the trade via Montreal. A resolution to that effect was passed.

A company with capital stock of \$650,000 has been formed in Montreal for the manufacture of the Van Warmer Railway Car.

The Central Ontario Railway Company expect to have their line in working order a distance of one hundred miles from Trenton next summer.

Tenders have been asked for the construction of the Pontiac and Pacific Junction Railway bridge across the Ottawa River at Lapasse.

A meeting was held in New York on Monday, January 15th, by the directors of the Ottawa, Waddington and New York Railroad Bridge Company, and as it is very probable the Ontario Government will grant a subsidy, it was resolved to ask the New York Legislature for similar aid.

The Grand Trunk and Chicago Railway has just added to its equipment ten large smoke consuming engines. They have a tender capacity of 3,500 gallons, and can run long distances without stopping for water.

It is reported that the Grand Trunk Railway have succeeded in purchasing a controlling interest in the bonds of the St. Lawrence and Ottawa Railway.

The Ontario and Pacific Railroad which it is proposed to run between Cornwall on the Grand Trunk Railroad, and Sault Ste. Marie via Ottawa, will be a very important line, as the traffic of the northwest for Montreal, New York, Boston and Portland will have some 400 miles less railway carriage than by the Chicago route. The capital stock has all been subscribed for, and it is expected that work of construction will begin in spring.

On Saturday Messrs. A. T. Drummond, of Montreal, and H. N. Ruttan, of Winnipeg, interviewed Sir John Macdonald in respect of a land subsidy for the Westbourne and Northwestern Railway.

## NEW CANADIAN TELEPHONE COMPANY.

Hon. Jno. Hamilton, M. W. Ogilvie and Mr. W. Cassels, the president of the District Telegraph Co., all of Montreal, are at the head of the new Telephone Co. Their lawyer, Mr. Benjamin, is now in New York, buying the latest patents by others than Bell, as Bell has sold his monopoly to an existing company in Canada.

L. A. Senecal, president of the North Shore

Railway, has a grand colonization scheme, and a new Atlantic cable, in view. An application will be made to the Quebec Legislature for power to form a company and secure a large tract of land upon which to locate separately, colonies of Irish, French, Germans, Italians, and other nationalities. Mr. Senecal claims that \$10,000,000 have been subscribed for the purpose. In regard to the new cable, Mr. Senecal says that a syndicate will manage its affairs, under a ten year contract. The syndicate will be composed of business men having an interest in maintaining the cable and in securing a low rate for their own benefit. The managers will not control the stock, which will be held by parties in Paris, London, New York, Montreal and Toronto. The company will reduce the rate to 25 cents per word, and be perfectly separate from the Great Northwestern, and have independent lines to Montreal, Quebec, New York and other points. Mr. Senecal is sanguine, and those who are best acquainted with him say that means success.

## GRAND TRUNK RAILWAY COMPANY VS. CANADIAN PACIFIC RAILWAY COMPANY.

It is reported in Montreal that there is a great project on foot to monopolize the land and water trade of the St. Lawrence by a combination formed of the Grand Trunk, North Shore, the Richelieu and St. Lawrence Navigation Company, and the Rome, Watertown and Ogdensburg Railway. On the other hand it is reported that another company has been formed with Mr. Kirkpatrick, M. P., of Kingston, at its head for the purpose of running a steamboat line from Hamilton to Quebec. The boats are being built on the Clyde; a number of steamers have been chartered to start in the spring. It is supposed that the Canadian Pacific and others opposed to the Grand Trunk are interested in this company.

On Thursday the Right Honorable Sir John A. Macdonald entered upon his 69th year. Sir John looks ten years younger. His host of friends and admirers the world over will be pleased to know that he is in vigorous health, and they will all join in wishing him continued health and happiness. W.

NEARLY \$300,000,000 is the estimated cost of the proposed ship canal from Bordeaux, on the Bay of Biscay, to Narbonne, on the Gulf of Lyons, a distance of about 240 miles—thus making a direct connection between the Atlantic and the Mediterranean. It is proposed to tow vessels by steam-engines running along the banks, and the voyage is expected to be made in three days. In addition to this vast engineering scheme is that for uniting the Loire and Rhone by canal, with a similar purpose.

KRUPP's works, at Essen, now employ some 439 steam boilers; 456 steam engines, with an aggregate horse power of 18,500; 89 steam hammers, varying in weight from 200 pounds to 50 tons; 21 rolling-mills; machines for making tools, 1,622; furnaces, 1,556, of which fourteen are high furnaces; 25 locomotives, and five propellers, with a tonnage of about 8,000. Annual production, 300,000 tons steel and 26,000 tons iron.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Jan. 16.

	W.	Th.	F.	Sat.	13.	M.	15.	Tu.	16.
Adams Express.....	133			134					
Albany and Susq..									
1st mortgage.....									
2d mortgage.....									
American Express..	92	92		92½			92		
Burl., C. R. & Nor..									
1st mortgage 5s.	101	101	100¾	101	101½	101			
Canada Southern ..	67½	67½	67½	68½	68	68			
1st mortgage guar.	95	95½	95½	95½	95½	95½			
Central of N. Jersey	70½	70½	70½	70½	71½	74			
1st mort. 1890....									
7s, consol. ass.						110½			
7s, convertible ass.						109½			
7s, Income.....				80		85			
Adjustment.....						105½			
Central Pacific.....	87½	87½	87½	87½	84½x	85			
6s, gold.....	113½	113½				113½			
1st M. (San Joa.)									
1st M. (Cal. & Or.)									
Land grant 6s.....									
Chesapeake & Ohio.	23½			24½					
1st pref.....	33½	34½	33½			33½			
2d pref.....	24	25½							
1st mort., series B	90	90	90½	90½	90½	90½			
Chicago and Alton.	136½	135½	136½	136½					
Preferred.....									
1st mortgage.....									
Sinking Fund.....					114½	114½			
Chi., Bur. & Quincy	123½	123	123½	124½	124½	124½			
7s, Consol. 1903..	126½	126½							
Chi., Mil. & St. Paul	105½	106	106	106½	106½	107½			
Preferred.....	121½		121½	122		122			
1st mortgage, 8s.									
2d mort., 7 3-10s.									
7s, gold.....									
1st M. (La. C. div.)	120								
1st M. I. & M. div.)						122			
1st M. (I. & D. ext.)									
1st M. (H. & D. div.)									
1st M. (O. & M. div.)									
Consolidated S. F.					124				
Chi. & North Western	133½	133½	133½	134½	134½	134½			
Preferred.....	147½	148	148	148½	148½	149			
1st mortgage.....									
Sinking Fund 6s.									
Consolidated 7s.						125½			
Consol. Gold bo'ds									
Do. reg.....									
Chi., R. Isl. & Pac.	124½	124½	124½	125½	125½	125½			
6s, 1917, c.....					125	125			
Clev., Col., Cin. & Ind.	82½	82	82		82				
1st mortgage.....									
Clev. & Pittsburgh gr.		139	139½	139½	139½	140			
7s, Consolidated.									
4th mortgage.....	108				110				
Col., Chi. & Ind. Cent			4½	4½		4½			
1st mortgage.....		130							
2d mortgage.....									
Del. & Hud Canal.	108½	108½	108½	108½	107½	108½			
Reg. 7s, 1891....					113½	114			
Reg. 7s, 1884....									
7s, 1894.....						116			
Del., Lack. & Western	127½	127½	127½	126½	125½	127½			
2d mortgage 7s..									
Consol. 1907....									
Erie Railway.....									
1st mortgage.....		125½							
2d mort. 5s, ext.						102½			
3d mortgage.....						107½			
4th mort. 5s, ext.						110			
5th mortgage.....						130			
7s, Consol. gold..			130	129½	129½	130½			
Great West. 1st mort			108						
2d mortgage.....			100	100					
Hannibal & St. Jo..						45½			
Preferred.....	79	80½	82	82	84	78½x			
8s, Convertible....		107							
Houston & Tex. Cen				78	78	79			
1st mortgage.....				108½		108½			
2d mortgage.....				122					
Illinois Central....	144½	144½	144½	145½	145½	146½			
Lake Shore & Mich So	112½	112½	113	113	113½	113½			
Consol. 7s.....				125	126				
Consol. 7s, reg.				126½	125	125			
2d Consolidated..									
Lsh. & W. B. con. ass	103½	104½				104½			
Long Dock bonds..									
Louisville & Nash.	54½	54½	55	55½	55½	56½			
7s, Consol. reg.					116				
Manhattan.....						49			
1st pref.....			88						
Met. Elevated.....				85	84½				
1st mortgage.....	93½	98½	98½	98½	98½	98½			
Michigan Central.	98	97½	98½	98½	98½	98½			
7s, 1902.....	125½				125½	125½			
Morris & Essex.....	123½	122½	123		123	122½			
1st mortgage.....									

2d mortgage.....									
7s of 1871.....									
7s, Convertible....									
7s, Consolidated ..				122		122½			
N. Y. Cen. & Hud. R.	126½	126½	126½	127	127½	127½			
6s, S. F. 1883....						101½			
6s, S. F., 1887....									
1st mortgage.....	130½		130½		130½	130½			
1st mortgage, reg.									
N. Y. Elevated.....				101					
1st mortgage.....	114½		114½		114½	115			
N. Y. & Harlem....				196					
Preferred.....									
1st mortgage.....						130			
1st mortgage, reg.									
N. Y. Lake Erie & W	40½	40	40½	40½	40½	40½			
Preferred.....			82½	82½					
2d Consolidated..	97	97	96½		97	97			
New ad 5s fund ..									
N. Y., N. Hav'n & Hart	175	171½	172		170	169			
North Mo. 1st mort	118½								
Northern Pacific..	49½	48½	48½	48½	48½	49			
Preferred.....	86	85½	85½	85½	85½	85½			
Ohio & Mississippi.			32½	34	34				
Preferred.....									
2d mortgage.....									
Consolidated 7s..	116								
Consol. S. Fund ..						116½			
Pacific Mail S. S. Co	41½	41½	41½	41½	41½	42½			
Pacific R. R. of Mo.									
1st mortgage.....				107½	109½				
2d mortgage.....									
Panama.....									
Phila. & Reading..	55½	55½	55½	55½	55½	56½			
Pitts. Ft. W. & Chi. gtd	136½	136½				138			
1st mortgage.....						136½			
2d mortgage.....									
3d mortgage.....									
Pullman Palace Car	123½	123			124½	125			
Quicksilver Min'g Co									
Preferred.....									
St. Louis & San Fran			34½						
Preferred.....			54	54½		54½			
1st Preferred.....	100½		99			99½			
St. L., Alt'n & T. H.			51½	52	51½				
Preferred.....	92½	93½	93	93	93				
1st mortgage.....									
2d mort. pref.....			110						
Income bonds.....			106						
St. L., Iron Mt. & S.									
1st mortgage.....				117					
2d mortgage.....				106		108			
Toledo and Wabash.									
1st mortgage.....									
2d mortgage.....				100		100½			
7s, Consolidated..									
St. Louis Division									
Union Pacific.....	103½	102½	103½	103½	104	104½			
1st mortgage.....	113½	113½	113½	113½	113½	113½			
Land Grant 7s..						116½			
Sinking Fund 8s.		119½		119½	119½	119½			
United States Ex....	64		63½		63	62½			
Wabash, St. L. & Pac	35	34½	34½	35½	35½	35½			
Preferred.....	54½	54½	54½	54½	55½	55½			
New mort. 7s.....									
Wells-Fargo Ex....		125½	125½			125			
Western Pacific b'ds									
Western Union Tel.	82	81½	82	82½	83½	83½			
7s., S.F. conv., 1900									

## FEDERAL STOCKS:—

U. S. 4s, 1907, reg.	119½		119½						
U. S. 4s, 1907, coup.	119½		119½						
U. S. 4½s, 1891, reg.				113½		113½			
U. S. 4½s, 1891, coup	113½			113½					
U. S. 5s, cont'd at 3½									
U. S. 3s, reg.....	103½	103½	103½	103½	103½	103½			
Dt. of Col. 3-65s, reg									
Dt. of Col. 3-65s, coup									

## Boston Stock Exchange.

Closing Prices for the Week Ending Jan. 16.

	W.	Th.	F.	Sat.	13.	M.	15.	Tu.	16.
Atch., Top. & San. Fe.	86	86½	86½	85x	84½	84½			
1st mortgage.....				121	121	121			
Land Grant 7s.....									
Boston & Albany...	175	175	174½		174½	174½			
Boston and Lowell.	102								
Boston & Maine....	150½	150½	151	150	150½				
Boston & Providence	161								
Bos'n, Hart. & Erie 7s									
Burl. & Mo. R. L. G. 7s									
Burl. & Mo. R. in Neb									
6s, exempt.....						113	111½		
4s.....									
Chi., Burl. & Quincy	123½	123½	124	124½	124½	124½			
Cin., Sand & Clev (\$50)									
Concord (\$50).....									

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Jan. 15.

Tu. 9. W. 10. Th. 11. F. 12. Sat. 13. M. 15

Baltimore & Ohio....	200	.....	.....	.....	.....	.....
6s, 1885.....	.....	.....	.....	.....	.....	.....
Central Ohio (\$50)....	.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....	.....
Marietta & Cincin'ti....	.....	.....	.....	.....	.....	.....
1st mortgage, 7s....	129½	.....	.....	.....	.....	.....
2d mortgage, 7s....	99½	.....	99½	99½	100	.....
3d mortgage, 8s....	53½	53½	53½	53½	53½	.....
Northern Cen. (\$50)....	55	.....	.....	.....	.....	.....
2d mort. 6s, 1885....	.....	.....	102½	.....	.....	.....
3d mort. 6s, 1900....	.....	.....	.....	.....	.....	.....
6s, 1900, gold.....	114½	.....	.....	.....	.....	.....
6s, 1904, gold.....	.....	.....	.....	.....	.....	.....
Pitts. & Connells. 7s....	.....	.....	119½	.....	.....	.....
Virginia 6s Consol....	60	55	55	55½	55½	.....
Consol. coupons....	56½	54½	53½	53½	53½	53½
10-40 bonds.....	40	.....	38	39	39½	40
Def'd Certificates.....	.....	.....	.....	.....	.....	.....
New 38.....	.....	.....	.....	48½	.....	.....
Western Maryland....	.....	15½	15	.....	.....	.....
1st M., end. by Balt....	.....	.....	.....	.....	.....	.....
2d M., do.....	.....	.....	.....	.....	.....	.....
3d M., do.....	.....	.....	.....	.....	.....	.....
1st M., unendorsed 100	110	.....	.....	.....	.....	.....
2d M., end. Wash Co....	.....	.....	.....	.....	.....	.....
2d M., preferred....	.....	.....	.....	.....	.....	.....
City Passenger R. R....	.....	.....	.....	.....	.....	.....

**London Stock Exchange.**

Closing Prices

Dec. 29. Dec. 22.

Baltimore and Ohio 5s, 1927.....	107	109	107	109
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	110	112	110	112
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs....	89	90	89	90
Do. 1st mort. 6s, 1895-98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds 118	118	120	118	120
Do. Con. M. sp. c. till '83 after 6p. c. 117	117	117	117	119
Illinois Central \$100 shares.....	147	148	149	150
Do. S. F. 5s, 1903.....	105	107	104	106
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 91	91	93	91	93
Do. capital stock \$100 shares....	54	55	55	56
N. Y. Cen. & Hud. R. mort. bonds 130	130	135	133	135½
Do. \$100 shares.....	132	133	134½	134½
Do. mort. bonds (stg.).....	122	124	122	124
N. Y. Lake Erie & West. \$100 shs. 40½	40½	40½	40	40½
Do. 6 p. c. pref. \$100 shares.....	84	86	89	91
Do. 1st Con. Mort. bonds (Erie) 128	128	132	128	132
Do. do. Funded Coupon bonds 125	125	130	125	130
Do. 2d Consol. Mort. bonds....	99	101	99	101
Do. do. Funded Coupon bonds....	97	99	97	99
N. Y. Pa. & Ohio 1st mort. bonds. 50½	50½	51½	50½	51½
Do. Prior Lien bonds (sterling) 100	105	105	100	105
Pennsylvania \$50 shares.....	61½	62	61½	62½
General Mortgage.....	124	126	124	126
Phil. & Erie Gen. mort. 6s, 1920.....	117	119	117	119
Philadelphia & Reading \$50 shs....	27	27½	28	28½
General Consol Mortgage.....	115	117	115	117
Do. Improvement Mortgage.....	104	106	104	106
Do. Gen. Mtg. '74, ex-def'd coup. 97	97	99	97	99
St. L. Bridge 1st mort. gold bond 122	124	121	121	123
Do. 1st pref. stock.....	92	96	92	96
S. P'fic of Cal. 1st mort 6s, 1905-6. 106½	107½	107½	106½	107½
Union Pacific 1st mtg. 6s, 1896-9. 115	117	115	117	117
Wabash, St. L. & P. \$100 shares.. 36	37	35	35	36
Do. \$100 pref shares.....	56	57	55½	56½
Do. gen. mort. bonds.....	81	83	81	83

**AMERICAN RAILROAD JOURNAL****Financial and Commercial Review.**

WEDNESDAY, JANUARY 17, 1883.

MONEY on call on stock collaterals during the morning was 5 per cent. Between 12:30 and 2 o'clock it was 4 per cent. In the last hour it was 4@3 per cent.

The posted rates for foreign exchange were 4.82½@4.86½; the actual rates were: Sixty-day bills, 4.82@4.82½; demand, 4.85½@4.86½; cables 4.86½@4.87; commercial bills, 4.80½@4.81. Continental exchange was as follows: Francs, 5.22½@5.21½ and 5.19½@5.18½; reichsmarks, 94½@95 and 95½. Guilders, 39½@40 and 40@40½.

THE Committee on Securities of the Stock Exchange have directed that the call of class 1 and class 2 of North Carolina special tax bonds be continued without change, and that class 3 be omitted and the title of the road to which they are issued substituted. The call will be special tax, class 1, coupon on April 1, 1869;

special tax, class 2, coupon on October 1, 1869; special tax, issued to the Western North Carolina Railroad, coupon on April 1, 1870; special tax, issued to the Western Railroad, coupon on April 1, 1870; special tax, issued to the Wilmington, Charlotte and Rutherfordton Railroad, coupon on April 1, 1870; special tax, issued to the Williamston and Tarboro Railroad, coupon on April 1, 1870. Some bonds have appeared issued to the Williamston and Tarboro Railroad dated October 1, 1869, and some issued to the Atlantic, Tennessee and Ohio Railroad. These have never been placed on the list and are not a good delivery.

Upon the receipt of the 11.1 per cent dividend the preferred stockholders of the Northern Pacific Railroad Company are required to sign a receipt which acknowledges the amount received as the full amount of net earnings from September 29, 1875, to July 1, 1882. Under the plan of reorganization adopted June 30, 1875, the company is discharged from all further claim for any earnings or dividend thereof under said plan or otherwise up to July 1, 1882, upon the preferred stock.

At a meeting of the directors of the Hannibal and St. Joseph Railroad Company at their office in this city on the 12th inst. which was attended by Messrs. Wm. Dowd, John Bloodgood, Sidney Dillon, Myron P. Bush, George J. Gould, Solon Humphreys, Russell Sage, and general manager Carsons, the following resolution was passed:

*Resolved*, That in view of the extraordinary expenditures involved in the litigation of the company with the State of Missouri the regular dividend upon the preferred stock for the six months ending December 31, 1882, be 3 per cent.

In accordance with this resolution a dividend of 3 per cent on the preferred stock was declared, payable on the 13th of February.

President Dowd stated that the earnings of the company for the year 1882 were \$2,418,393, the expenses \$1,374,000, and the net earnings \$1,044,393—an increase in net earnings over the preceding year of about \$171,000. The fixed charges and dividends on the preferred stock (6½ per cent) for the year were \$983,000, so that the company has a surplus of about \$61,000. The percentage of operating expenses will be less than 57 per cent as against 62 per cent for the year 1881. He said that the company was never in better financial condition. Both the freight and passenger earnings have increased, and the gain in freight is entirely from this year's crop. The company has kept up the work of improvements, and has now only about 25 miles of iron rails in the whole road, and this is on the branches. It is the intention to replace this year these 25 miles of iron rails with steel. Over 160,000 oak ties were put in during the year, and three iron bridges are now under contract and will soon be completed. The rolling-stock of the company has also been largely augmented and improved. The litigation mentioned arose as follows:

The State of Missouri issued as a loan to aid in the construction of the road \$3,000,000 of bonds, and in 1881, though the bonds were not fully due, the Hannibal and St. Joseph Railroad Company made an issue of \$3,000,000 bonds under a consolidated mortgage and paid

that amount into the treasury of the State for the purpose of taking up the loan. The question raised by the State and now under consideration by the courts is whether this payment discharged the company from any further liability for interest on these bonds, or whether the company is still bound to make good the difference between the amount earned by the State upon the money paid to her and the interest she is obliged to pay on the bonds.

The Norfolk and Western Railroad Company notified the Stock Exchange on the 13th inst. of its intention to issue 40,000 shares of common stock in addition to the 30,000 shares now outstanding. The object for which such issue is made is to accept subscriptions for the same payable in shares of stock of the Shenandoah Valley Railroad Company.

The annual report of the Lehigh Valley Railroad Company, which was presented at the annual meeting of the stockholders on the 16th inst., shows that the coal tonnage of the road for the year was 6,336,141 tons, of which 6,257,159 tons were anthracite and 78,982 bituminous. This is an increase of 465,440 tons as compared with the previous year. The income from all sources, including interest received from investments, was \$11,239,312.76; operating expenses of railroad, \$5,833,677.34; net revenue, \$5,405,635.42. After deducting interests, dividends, general expenses, and \$554,348 charged to accumulated depreciations, the balance to the credit of profit and loss is \$105,546. The company have no floating debt. The second mortgage bonds, amounting to \$400,000, of the Southern Central Railroad Company, of New York, which fell due last March, were paid by the Lehigh Valley Railroad Company and a new mortgage issued at a reduced rate of interest. The report further states that the line of steamers on the lakes between Buffalo and Chicago has proven successful and has become a paying investment, aside from the advantage as a feeder for the company's railroad lines.

The gross earnings of the Norfolk and Western Railroad for 1882 were \$2,429,981.95, an increase of \$162,693.33; expenses, \$1,324,000.99; net earnings, \$1,105,980.96, an increase of \$46,256.34. Four quarterly dividends have been paid, amounting to \$600,000, at the rate of \$1 per share. The New River Division will be open for business by March. Intimate and permanent relations with the Shenandoah Valley Railroad Company have been established with little, if any, actual cost to the Norfolk and Western Railroad Company.

The income of the Middlesex (Mass.) Railroad Company for the year 1882 was \$418,865.41; operating expenses, \$348,022.02; total surplus, \$50,709.32. The number of passengers carried was 6,627,356, an average of 41 per trip, being an increase of 637,900 passengers over the preceding year. The mileage owned is 21.634. The provender bill for the year was \$78,889.72; \$9,989.87 was paid other companies for use of tracks and \$8,293.55 received on the same account from other companies. Coupons, dividends and interest were paid to the amount of \$64,643.40.

At the commencement of the fiscal year, November 1, 1880, there was a balance in the General Fund of the State Treasury of Indiana



of \$504,894.94; and there was received into the fund from all sources during the year 1880-'81, \$1,408,025.08—making a total of \$1,912,920.02; the disbursements therefrom during the same time amounted to \$1,634,691.80, leaving a balance at the end of that year of \$278,218.22. The total receipts of the fund during the years 1881-'82 were \$1,260,401.64—making the total amount at the end of the year 1882, \$1,538,629.86; from which deduct disbursements during the year, amounting to \$1,436,900.65, leaving a balance November 1, 1882, of \$101,729.21. The indebtedness of the State is as follows: 5 per cent certificates, State stock, \$14,469.99; 2½ per cent certificates, State stock, \$2,355.13; 5 per cent bonds payable in New York, due Dec. 1, 1889, but payable at the pleasure of the State after April 1, 1884, \$585,000; 24 Internal Improvement bonds past due, \$24,000; and 6 Internal Improvement bonds at 5 per cent, held by the United States, due July 1, 1886, \$5,000—total, \$631,825.12. The accumulated interest upon the 24 old bonds above mentioned should be added, but the precise amount can not now be stated. The indebtedness of the State to the school fund is evidenced by 5 non-negotiable bonds for the aggregate sum of \$3,904,783.22, bearing 6 per cent interest; and the indebtedness to Purdue university is evidenced by a single bond for \$340,000, bearing 5 per cent interest.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Allegheny Central, 10; Atlantic and Pacific 1st, 9½; Boston and New York Air Line pref., 8½; Baltimore and Ohio, Parkersburg div. 1st, 113; Buffalo, New York and Erie 1st, 1916, 129; Cleveland and Toledo S. F., 107; Cedar Falls and Minn. 1st, 114; Chicago, St. Paul Minn. and Omaha, 52½; do. pref., 113½; do. consol., 109; Central Iowa, 25; Chicago and Eastern Illinois 1st, 98; Chicago and Milwaukee 1st, 123; Chicago, St. Louis and New Orleans 58, 103½; Chicago, Milwaukee and St. Paul, Chicago and Pacific Western div. 1st, 92; do. Southern Minn. div. 1st, 106½; do. I. & C. and Dav. div. 1st, 94½; Chesapeake and Ohio 1st, Series A, 109; do. cur. 68, 54; Clev., Col., Cin. and Ind. consol., 120½; Columbus, Chicago and Indiana Central inc., 49½; Chicago and Northwestern S. F. 58, 100½; Columbia and Greenville 1st, 99; Chicago, Burlington and Quincy, Denver div. 48, 84½; do. Iowa div. 48, 87; Denver and Rio Grande, 46½; do. 1st, 107½; do. consol., 90; Dubuque and Sioux City, 89; Delaware and Hudson 1st, Penn. div., 126; Denver, South Park and Pacific 1st, 100; East Tenn., Virginia and Georgia, 10; do. pref., 17½; do. inc., 40; do. 1st, 115; do. 58, 92½; Elizabethtown, Lexington and Big Sandy 68, 94; Fort Worth and Denver, 32½; do. 1st, 72½; Gulf, Colorado and Santa Fe, 1st, 109; Houston and Texas Central 1st, Western div., 105; Indiana, Bloomington and Western, 34; do. consol. inc., 42; do. Eastern div. 68, 93; International and Gt. Northern 1st, 105½; do. coupon 68, 85½; Indianapolis, Decatur and Springfield 1st, 102; Iowa Midland 88, 131; Kansas Pacific 1st consol., 100½; do. 68, Denver div. ass., 107; Long Island, 62½; do. consol. 58, 97½; Lake Erie and Western, 31½; do. 1st, 101; Louisville, New Albany and Chicago, 64; do. 1st, 101½; Lafayette, Bloomington and Muncie 1st, 99; Louisville and Nashville genl. mort. 68, 92½; Manhattan Beach, 18½; Missouri, Kansas and Texas, 34; do. consol. 78, 101½; do. 2d, 58½; do. gen. mort. 68, 84½; Missouri Pacific, 104½; do. 1st consol., 101½; do. 3d, 10; Memphis and Charleston, 49; Minneapolis and St. Louis, 28½; do. pref., 64½; do. 1st, 119½; do. Southwestern exten. 1st, 110½; do. Pacific ext. 1st, 101½; do. Iowa ext. 1st, 112; Mobile and Ohio, 18½; do. 1st debent., 86; do. 2d debent., 50; do. 3d debent., 38; Milwaukee, Lake Shore and Western, 98½; do. 1st, 98½; Michigan Southern S. F., 106; Metropolitan Elevated 2d, 88; New York, Chicago and St. Louis, 14½; do. pref., 32½;

do. 1st, 97½; Nashville, Chattanooga and St. Louis, 61½; do. 1st, 116; New York, Ontario and Western, 26½; Norfolk and Western pref., 49; do. genl. mort., 100½; Northern Pacific, 102½; Nashville and Decatur 1st, 116; New Orleans Pacific 1st, 87½; New Orleans and Mobile 1st, 91; Ohio Central, 13½; do. 1st, 93; Ohio Southern, 12½; do. inc., 29½; do. 1st, 81½; Oregon Railway and Nav., 140½; do. 1st, 106; Oregon Transcontinental, 86; Oregon Short Line 68, 100; Ohio and Mississippi, Springfield div. 1st, 115; Peoria, Decatur and Evansville, 27; do. 1st, 96; do. inc., 70; do. Evansville div. inc., 60; Richmond and Alleghany, 1st, 78; Rochester and Pittsburgh, 21; do. inc., 45; do. 1st, 104½; Rensselaer and Saratoga, 140; Rome, Watertown and Ogdensburg, 32; do. inc., 44½; do. ext. 58, 74; Richmond and Danville, 56½; do. 1st, 94; do. debent., 60½; Richmond, Danville and West Point, 24; St. Louis, Alton and Terre Haute dividend bonds 64½; St. Paul and Duluth, 40½; do. pref., 95; South Carolina, 1st, 102; do. inc., 60; St. Paul, Minn. and Man., 144; do. 1st, 108; do. 2d, 108½; do. Dakota ext. 1st, 107½; St. Louis and San Francisco 2d, class B, 94; do. C, 92; St. Louis and Iron Mt., Cairo, Ark. and Texas 1st, 106; do. 58, 76; do. Arkansas Branch 1st, 109; do. Cairo and Fulton 1st, 107½; St. Louis, Kansas City and Northern, R. E. 78, 108; do. Omaha div. 1st, 108½; St. Paul and Sioux City 1st, 113; South Pacific of Mo. 1st, 102½; Texas and Pacific, 41½; do. inc. L. G., 58; do. Rio Grande div. 1st, 85½; Utah Southern ext. 1st, 100; Wabash, St. Louis and Pacific genl. mort. 68, 80; do. Toledo, Peoria and Western 1st, 107; Warren, 118; Arkansas 78, Central, R. R. issue, 18½; do. L. R. & Ft. S., 37½; L. R., P. B. & N. O., 35½; Alabama, Class A, 83½; Georgia 68, 1886, 105½; Louisiana consol. 78, 73½; do. ex-mat. coupon, 65½; North Carolina S. T. 3d class, 9; South Carolina 68, non-fund., 7½; Tennessee 68, 42; do. compromise, 45; Virginia 68, def., 14½; do. 68, ex-mat. coupon, 55; American Cable, 69½; Mutual Union Tel., 22; do. 68, 75; Colorado Coal and Iron, 29½; do. 68, 83; Consolidation Coal, 27½; Maryland Coal, 17; Ontario Mining, 35.

**Boston.**—Atlantic and Pacific blocks, 102; do. 68, 94½; do. inc., 19½; Atchison, Topeka and Santa Fe 1st, guar., 113; Boston, Clinton, Fitchburg and New Bedford pref., 135; Burlington and Missouri River 68, in Neb., non-ext., 103; California Southern, 9; Columbus, Springfield and Cincinnati, 9; Chicago, Burlington and Quincy 48, old, 86½; do. Denver ext. 48, 83½; do. S.W. div. 48, 80½; Central of Iowa, 25½; Chicago and West Michigan, 60; Connecticut and Passumpsic Rivers, 90; Detroit, Lansing and Northern 78, 119; Flint and Pere Marquette, 25; do. pref., 99; Fremont and Elkhorn 78, 102; Iowa Falls and Sioux City, 89½; Kansas City, St. Joseph and Council Bluffs 78, 114; Kansas City, Lawrence and Southern 58, 105; Kansas City, Springfield and Memphis blocks, 101½; Kansas City, Fort Scott and Gulf pref., 121; Little Rock and Ft. Smith, 40; do. 78, 105; Maine Central, 80; Marquette, Houghton and Ontonagon, 71; do. pref., 15½; New Mexico and Southern Pacific 78, 113½; New York and New England 68, 105; Oregon Short Line 68, 97½; Portsmouth, Gt. Falls and Conway, 30; Rutland 3; do. 68, 97; Southern Kansas and Western 78, 109½; Sonora 78, 104½; Toledo, Cincinnati and St. Louis, 5½; do. 68, 45; Toledo, Delphos and Burlington, Branch inc., 10½; Wisconsin Central, 15; do. 78, 1st series, 79; do. 2d series, 40½; Brunswick Antimony, 14½; Franklin, 15½; Huron, 13½; Napa Quick-silver, 3½; Osceola, 32; Pewabic, 10; Sullivan, 1½; Silver Islet, 7.

**Philadelphia.**—Alleghany Valley, Eastern Extension 78, 118; Belvidere Delaware 2d, 105½; Central Transp. Co., 34; Chesapeake and Delaware Canal 68, 85; Nesquehoning Valley, 54; Northern Pacific pref. scrip. 84; Philadelphia and Reading Coal and Iron mort. 78, 75; do. debent. 78, 62; Philadelphia City 48, 1904, 113; do. 68, 1889, 117; do. 68, 1903, 133½; Pennsylvania Co. 68, 107; do. 4½, 95; Pennsylvania Car Trust 68, 1890, 100½; Pennsylvania Canal 68, 87; Philadelphia and Reading R. R. scrip. 102½; do. pref. stock, 32; do. genl. mort. 78, 100½; do. consol. gold 68, 111½; Philadelphia, Wilmington and Baltimore 48, 93½; Pennsylvania R. R. scrip. 120½; do. consol. mort. 58, 104½; Philadelphia, Germantown and Norristown, 106; St. Paul and Duluth, 40½; do. pref., 93; Susq. Canal 68, 60; Sunburg, Hazleton and Wilkesbarre 5, 86½; Western Pennsylvania 2d, 120½; West Jersey and Atlantic 68, 108½. The latest quotations are: City 68, 108@120; do. free of tax, 127@134; do. 48, new, 106@114; Pennsylvania State 58, new loan, 116

@118; do. 48, old, 110@112; do. 48, new, 113@115; Philadelphia and Reading Railroad, 28½@28¾; do. consol. mort. 78, reg., 123½@125; do. genl. mort. 68, coupon, 93@94; do. 78, 1893, 118½@120; do. 78, new conv., 75@76; United New Jersey R. R. and Canal, 188½@189; Buffalo, Pittsburg and Western, 18½@18¾; Pittsburgh, Titusville and Buffalo 78, 95@96; Camden and Amboy mort. 68, 1889, 112½@113½; Pennsylvania R. R., 60½@60¾; do. general mort. 68, coupon, 124@125; do. reg., 124@125; do. consol. mort. 68, reg., 117½@120; Little Schuylkill R. R., 57@57½; Schuylkill Navigation pref., 12½@13; do. 68, 1882, 89@91; Elmira and Williamsport pref., 58@60; do. 58, 99@100; Lehigh Coal and Navigation, 40@40½; do. 68, 1884, 101@103; do. R. R. loan, 115½@116; do. Gold Loan, 110@111; do. consol. 78, reg., 115@117; Northern Pacific, 49@49½; do. pref., 85½@86; North Pennsylvania, 65½@—; do. 68, 103@104; do. 78, 119@—; do. 78, General mort. reg., 124@—; Philadelphia and Erie, —@20; do. 78, 112@113; do. 58, 103½@104; Minehill, 61@62; Catawissa, 22@23; do. pref., 55@56; do. new pref., 54@56; do. 78, 1900, 120@125; Lehigh Valley, 63½@—; do. 68, coupon, 120@121; do. reg., 120@121; do. 78, reg., 133@134; do. consol. mort. reg., 120@120½; Fifth and Sixth streets (horse) 190@200; Second and Third, 114@116; Thirteenth and Fifteenth, 74@75; Spruce and Pine, 42@44; Green and Coates, 80@88; Chestnut and Walnut, —@92; Germantown, 60@70; Union, 110@—; West Philadelphia, 125@—; People's, 8@8½; Continental, 100@103.

**Baltimore.**—Atlanta and Charlotte, 59; do. 1st, 103; Baltimore and Ohio 2d pref., 122; Baltimore and Hanover 68, 102; Baltimore City 48, 1925, 110½; do. 58, 1894, 113; do. 58, 1916, 122; do. 68, 1890, 113½; Columbia and Greenville 1st, 99½; do. 2d, 72½; Cauton Co. 68, 108; Charlotte, Columbia and Augusta, 30; Northern Central 58, Series B, 96; North Carolina 48, 79; Maryland Defense 68, 101½; Ohio and Mississippi, Springfield div. 1st, 115½; Virginia and Tennessee 68, 100½; do. 88, 121; Virginia Midland 1st mort., 111; do. 2d mort., 107½; do. 3d mort., 90; do. 4th mort., 50; do. 5th mort., 94½; Wilmington, Columbia and Augusta, 108½; Wilmington and Weldon, 120. The latest quotations are: Atlanta and Charlotte 1st, 103½@103¾; Baltimore and Ohio, 200@205; do. 68, 1885, 104½@—; Baltimore City 68, 1886, 105½@105¾; do. 68, 1890, 113½@113¾; do. 58, 1894, 113@—; do. 58, 1916, 121½@123; Baltimore and Hanover 68, 105@—; Columbia and Greenville 1st, 1916, 99½@101; Marietta and Cincinnati 78, 1891, 129½@130; do. 78, 1896, 99½@100; do. 88, 1890, 54@54½; Northern Central, 54½@55½; do. 68, 1885, 102½@103; do. 68, 1900, gold, 115@115½; do. 68, 1904, gold, —@113½; do. 58, Series A, 99½@99¾; do. B, —@96; Ohio and Mississippi, Springfield div. 1st, 115½@115¾; Richmond and Danville gold 68, 93½@94½; Virginia Midland 5th mort., 95@99; do. inc., 49@55; Virginia consol., 54½@55; Virginia 10-408, 39½@39¾; Virginia 38, 48½@49; Wilmington, Columbia and Augusta, 108½@—; Western Maryland 1st undorsed, 109½@110; do. 2d pref., 109½@110.

HANNIBAL AND ST. JOSEPH RAILROAD CO.,  
No. 78 BROADWAY, NEW YORK, Jan. 12, 1883.  
THE DIRECTORS OF THIS COMPANY HAVE THIS day declared a dividend of THREE PER CENT upon its PREFERRED STOCK, payable THURSDAY, February 15, 1883, at this office. The transfer-books of the preferred stock will be closed at 3 o'clock P. M. on Tuesday, January 16, 1883, and reopen Saturday February 17, 1883.

JOHN A. HILTON, Secretary.

OFFICE CENTRAL PACIFIC RAILROAD COMPANY,  
SAN FRANCISCO, Jan. 5, 1883.  
THREE DOLLARS PER SHARE WILL be paid on presentation of dividend warrant No. 15 on or after Feb. 1, at this office, or at the office of the company, No. 23 Broad-st., New York. Transfer-books will be closed from P. M., Jan. 15, to 10 A. M., Feb. 3. By order of the Board of Directors.

E. H. MILLER, Jr., Secretary.

THE LAKE SHORE AND  
MICHIGAN SOUTHERN RAILWAY CO.,  
TREASURER'S OFFICE,  
GRAND CENTRAL DEPOT,  
NEW YORK, Dec. 22, 1882.  
THE BOARD OF DIRECTORS OF THIS COMPANY have this day declared a quarterly dividend of TWO PER CENT upon its capital stock, payable on THURSDAY, the FIRST day of FEBRUARY next, at this office. The transfer books will be closed at 3 o'clock P. M. on FRIDAY, the 29th inst., and will be reopened on the morning of Monday the 5th day of February next.  
F. W. VANDERBILT, Acting Treasurer.

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For **FULL INFORMATION** address the **SECRETARY**, care **GRAND PACIFIC HOTEL, CHICAGO.**

**E. H. TALBOTT,** **LUCIUS FAIRCHILD,**  
 Secretary. President.

**COMMISSIONERS:**

**Hon. LUCIUS FAIRCHILD**, Ex-Governor of Wisconsin and late Minister at Madrid, Spain.

**GEO. M. PULLMAN**, President Pullman's Palace Car Co., Chicago.

**AARON FRENCH**, Pittsburgh Car-Spring Co., Pittsburgh.  
**J. MCGREGOR ADAMS**, Adams and Westlake Mfg Co. etc., Chicago.

**E. V. CHERRY**, Vice-President Post & Co., Railway Supplies, Cincinnati.

**A. G. DARWIN**, President Allen Paper Car-Wheel Co., New York.

**O. W. POTTER**, President North Chicago Rolling Mill Co., Chicago.

**H. E. SARGENT**, late General Manager Northern Pacific Railroad, Chicago.

**JAMES MCMILLAN**, President Michigan Car Co., etc. Detroit.

**GEO. WESTINGHOUSE, Jr.**, President Westinghouse Air-Brake Co., etc. Pittsburgh.

**J. H. BASS**, Prop. Bass' Car Wheel Works, Fort Wayne.

**E. H. WILLIAMS**, Baldwin Locomotive Works, Phila.

**WM. S. EATON**, National Tube Works Co., etc. Boston.

**WM. CHISHOLM**, President Cleveland Rolling Mill Co., etc. Cleveland.

**THOMAS M. CARNEGIE**, President Edgar Thomson Steel Co., etc. Pittsburgh.

**W. H. DOANE**, President J. A. Fay & Co., Wood-Working Machinery, Cincinnati.

**M. M. BUCK**, Railway Supplies, St. Louis.

**C. W. ROGERS**, Vice-President Am. Live Stock and Meat Transportation Co., etc. New York.

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**MARENGO, Iowa Co. Iowa.**



## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Fe...100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S...100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Apr. '82 3 1/2
Atlanta and W. Point...100	1,232,200	semi-an	Jan. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchest & Phil. pref.100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	June '81 3 1/2	Louisville & Nashv...100	19,130,913	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt. M*100	225,000	semi-an	July '81 3	Lowell & Andover...100	500,000	semi-an.	Jan. '82 3 1/2	Wilmington & Weld'n.100	1,456,200	semi-an.	July '82 3
Baltimore and Ohio.100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Oct. '81 2 1/2	Wil., Col. & Aug. *100	960,000	semi-an.	Jan. '83 3
" " pref.100	5,000,000	semi-an	Jan. '83 3	Manchester & Law...100	1,000,000	semi-an.	Nov. '82 5	Winchester & Poto'c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manhattan.....100	13,000,000	.....	.....	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	" " 1st pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	" " 2d pref.100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos. & N. Y. Air Line pf.100	2,795,227	q'arterly	June '82 1	Marietta & Cincinnati 50	1,386,350	.....	.....				
Bos., Cl. F. & N. B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	" " 1st pref 50	8,105,600	semi-an.	Sep. '66 38				
Bos., Conc. & Mont. pf.100	800,000	semi-an	Nov. '82 3	Marq. Hout. & Ont.....100	2,306,600	.....	Feb. '83 4	Albany City.....100	200,000	annual	.....'80 5 1/2
Boston and Lowell.....500	3,040,000	semi-an	Jan. '83 2 1/2	" " pref.....100	2,259,026	semi-an.	Feb. '83 4	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Boston and Maine.....500	6,921,274	semi-an	Nov. '82 4	Massachusetts*.....100	4,022,500	semi-an.	Aug. '82 3	Balt., Cat. & El. Mills. 100	80,000	semi-an.	Jan. '83 2 1/2
Boston & Providence.....100	4,000,000	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Bleeker St. & Ful. F. Y. 100	900,000	semi-an.	July '82 1/2
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Michigan Central.....100	18,738,204	.....	Feb. '83 2	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Bos., Revere & Lynn.....100	419,400	semi-an	Jan. '83 3	Middlesex Central.....100	280,000	semi-an.	Aug. '82 3	Broadway (Brooklyn) 100	250,000	q'arterly	Oct. '82 6
Buffalo, N. Y. & Erie.....100	950,000	semi-an	Dec. '82 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5	B'way & 7th Av. (N. Y.) 100	2,100,000	q'arterly	Oct. '82 2
Buff. Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2	B'klyn & Hunter's Pt. 100	400,000	semi-an.	Oct. '82 6
Camden & Atlantic. 50	377,400	q'arterly	Nov. '82 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
" " pref. 50	880,650	q'arterly	Nov. '82 4	Mobile & Montgomery 100	3,022,517	semi-an.	Feb. '80 2 1/2	Bushwick (Brooklyn) 100	309,000	semi-an.	Oct. '82 6
Camden & Burl. Co.....100	381,925	semi-an	July '82 3	Morris and Essex.... 50	15,000,000	semi-an.	Jan. '83 3 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6	Can. Park, N. & E. Riv. 100	1,800,000	q'arterly	Oct. '82 4 1/2
Cape May & Millville* 50	447,000	semi-an	June '81 3	Nashua and Lowell. 100	800,000	semi-an.	Nov. '82 4	Christoph'r & Tenth St 100	650,000	semi-an.	Aug. '82 2 1/2
Catawissa*..... 20	1,159,500	annual	Oct. '82 2 1/2	Nashua & Rochester. 100	1,305,800	semi-an.	Oct. '82 1	Citizens' (Phil.)..... 50	192,500	q'arterly	Jan. '82 2 1/2
" " pref..... 20	2,200,000	semi-an	Nov. '82 3 1/2	Nashv. & Decatur.....100	1,827,000	semi-an.	June '81 3	Citizens' (Pbg.)..... 50	200,000	annual.	.....'80 14 1/2
" " new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2	Coney Island & Bklyn 100	500,000	semi-an.	Oct. '80 5
Cayuga and Susq*... 50	589,110	semi-an	July '81 4 1/2	Naugatuck.....100	2,000,000	semi-an.	July '82 5	Continental (Phil.).. 50	580,000	semi-an.	Jan. '83 6
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Nov. '82 1 1/2	Naukehonong Val'y* 50	1,300,000	semi-an.	Sept. '82 5	D. Dock, E. B. way & Batro 100	1,200,000	q'arterly	Aug. '82 4
" " pref.100	769,600	semi-an	Aug. '82 3 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Oct. '81 1	Elgin Av. (N. Y.).....100	1,000,000	q'arterly	Oct. '82 3
Central of Georgia.....100	7,500,000	semi-an	June '82 4	New London North*100	1,500,000	q'arterly	Oct. '82 1 1/2	42d St. & G. St. Ferry 100	747,000	semi-an.	May '82 6
Central of New Jersey 100	18,563,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R. 100	89,428,330	q'arterly	Jan. '83 2	Frankf. & Southw (Ph) 50	600,000	q'arterly	Oct. '82 6
Central Ohio*..... 50	2,437,950	semi-an	J n. '83 3	N. Y. and Harlem.....100	7,950,000	q'arterly	Jan. '83 4	Germantown, (Ph.).. 50	1,540,902	q'arterly	Jan. '83 2 1/2
" " pref..... 50	411,550	semi-an	J n. '83 3	" " pref.100	1,500,000	q'arterly	Jan. '83 4	Girard College (Ph.) 50	500,000	semi-an.	July '71 3
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	C. Line.....	.....	annual	Apr. '82 3	Grand St. & Newton. 100	170,091	semi-an.	July '81 2 1/2
Cheshire preferred.....100	2,155,300	semi-an	J n. '83 1 1/2	N. Y., Lake Erie & West. 100	77,087,600	.....	.....	Green & Coates St. (Ph) 50	708,650	q'arterly	Jan. '83 3
Chicago and Alton.....100	11,181,741	semi-an	Sept. '82 4	" " pref.100	7,987,500	annual.	Jan. '83 6	Heslon, Mantau & F'm 50	299,381	semi-an.	Jan. '75 4
" " pref.100	2,245,400	semi-an	Sept. '82 4	N. Y., N. H. & Hart.....100	15,500,000	semi-an.	Jan. '83 5	Highland.....100	600,000	semi-an.	July '82 4
Chi., Burl. & Quincy.....100	69,508,105	q'arterly	Dec. '82 2	N. Y., Prov. & Boston 100	3,000,000	q'arterly	Nov. '82 2	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
Chi., Iowa & Nebras* 100	3,912,200	semi-an	Jan. '83 4	Niag. Bridge & Canad*100	1,000,000	semi-an.	July '81 3	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
Chi., Mil. & St. Paul. 100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Sep. '81 3	Malden and Melrose. 100	165,000	.....	.....
" " pref.100	14,401,483	semi-an	Oct. '82 3 1/2	" " pref.100	1,000,000	semi-an.	Sep. '81 3	Metropolitan (Bost.) 50	1,500,000	semi-an.	Jan. '83 4
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	N. Eastern (S. C.) pref.100	86,000	semi-an.	May '81 4	Middlesex (Boston).. 100	650,000	semi-an.	Nov. '82 3 1/2
" " pref.100	21,525,353	q'arterly	Dec. '82 2	Norfolk & Western pref.100	15,000,000	q'arterly	Dec. '82 1	N. Y., Bay Ridge & Jam 100	150,000	.....	Oct. '87 7
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	North Pennsylvania. 50	4,527,150	q'arterly	Nov. '82 1 1/2	Ninth Av. (N. Y.).....100	797,320	.....	.....
Chi. and West Mich. 100	6,151,000	semi-an	Feb. '82 2 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4	Orange & Newark.....100	282,555	.....	.....
Chi., St. P., M. & O. pref.100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern N. Hampshire 100	3,068,400	semi-an.	Dec. '82 3	People's (Phila.) pref. 25	115,250	.....	July '82 2
Cin., Ham. & Dayton.....100	3,500,000	semi-an	Jan. '83 3	Northern Pacific pref.100	42,312,589	.....	Jan. '83 1 1/2	Philadelphia City... 50	475,000	semi-an.	July '82 4
Cin., Ind. St. L. & Chi. 100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5	Phila. and Darby.... 20	200,000	semi-an.	July '81 3 1/2
Cin., Sand. & Cleve. pf. 50	429,037	semi-an	Nov. '82 3	Oregon & Transcon*100	40,000,000	q'arterly	Jan. '83 1 1/2	Phila. & Grey's Ferry. 50	308,000	semi-an.	Jan. '82 6
Clev., Col. Cin. & Ind. 100	14,991,807	.....	Feb. '82 2	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Clev. & Pittsburgh* 50	11,244,336	q'arterly	Dec. '82 1 1/2	Oregon R'way & Nav. 100	6,000,000	q'arterly	Feb. '83 2 1/2	Ridge Avenue (Ph.).. 50	4,200,000	semi-an.	Oct. '81 11
Columbus & Xenia* 50	1,786,200	q'arterly	Dec. '82 2	Oswego & Syracuse. 100	1,320,400	semi-an.	Aug. '81 4 1/2	Second Avenue (N. Y.) 100	1,199,500	semi-an.	July '82 4
Col., Hock. Val. & Tol. 100	10,316,500	.....	Jan. '82 2 1/2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	Second & Third St. (Ph) 50	771,076	q'arterly	Jan. '83 4
Concord..... 50	1,500,000	semi-an	Nov. '82 5	Paterson & Hudson* 100	630,000	semi-an.	July '82 4	17th & 19th sts (Ph.) 50	250,000	semi-an.	July '81 3
Concord and Ports*... 100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Ramapo. 100	248,000	semi-an.	July '82 4	Sixth Avenue (N. Y.) 100	750,000	semi-an.	May '82 5
Conn. & Passump. Riv. 100	2,244,400	semi-an	Aug. '82 3	Pember & Hightst'n* 50	342,150	semi-an.	Jan. '82 3	Somerville (Boston). 100	113,000	semi-an.	Nov. '82 3
Connecticut River.....100	2,100,000	semi-an	Jan. '83 4	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2	South Boston..... 50	600,000	semi-an.	Jan. '83 4
Cumberland Valley..... 50	1,292,950	q'arterly	Jan. '83 2 1/2	Pennsylvania Co..... 50	20,000,000	annual	Dec. '82 4	Third Avenue, N. Y. 100	2,000,000	q'arterly	Aug. '82 5
" " 1st pref 50	241,900	semi-an	Oct. '82 4	Peoria & Bureau Val*100	1,200,000	semi-an.	Aug. '82 4	13th and 15th sts. Ph. 50	334,529	q'arterly	Jan. '83 4
" " 2d pref. 50	243,000	semi-an	Oct. '82 4	Philadelphia & Erie* 50	7,013,700	.....	.....	23d street, N. Y.....100	600,000	semi-an.	Aug. '82 4
Danbury & Norwalk. 50	600,000	.....	Oct. '82 2 1/2	" " pfd 50	2,400,000	semi-an.	Jan. '75 4	Union, Boston..... 50	374,300	semi-an.	Jan. '82 4
Dayton and Mich.*... 50	2,402,573	semi-an	Oct. '82 1 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Dec. '82 3	Union, Phila..... 50	1,005,000	semi-an.	Jan. '82 7
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	Phil. and Reading... 50	32,726,375	q'arterly	Jan. '76 2 1/2	West Philadelphia... 50	750,000	semi-an.	July '77 10
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	" " pref. 50	1,551,800	q'arterly	July '76 3 1/2				
Del. & Bound Brook*100	1,652,000	q'arterly	Nov. '82 1 1/2	Phila. and Trenton... 100	1,250,100	q'arterly	Jan. '83 2 1/2				
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
Denver & Rio Grande. 100	29,160,000	q'arterly	Jan. '80 1 1/2	Pittsb. Ft. W. & Chi.*100	19,714,285	q'arterly	Jan. '83 1 1/2	Delaware Division... 50	1,633,350	semi-an.	Aug. '82 1 1/2
Detroit, Lans. & Nor. 100	1,825,600	semi-an	Aug. '80 2 1/2	" " Special Imp. 100	6,770,900	q'arterly	Jan. '83 1 1/2	Delaware and Hudson 100	20,000,000	q'arterly	Dec. '82 1 1/2
" " pref.100	2,503,380	semi-an	Aug. '82 3 1/2	Pittsfield & N. Adams. 100	450,000	semi-an.	Jan. '83 2 1/2	Delaware & Raritan* 100	5,847,400	q'arterly	Jan. '83 2 1/2
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Portl., Saco & Portsmouth 100	1,500,000	semi-an.	Jan. '83 3	Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82 2
East Pennsylvania*... 50	1,709,550	semi-an	Jan. '83 3	Providence & Worcester. 100	2,000,000	semi-an.	Jan. '83 3	Monongahela Nav. 50	1,004,500	semi-an.	Jan. '83 3
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Rensselaer & Saratog.*100	7,000,000	semi-an.	Jan. '83 4	Morris, consolidated. 100	1,025,000	semi-an.	Aug. '82 2
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Danv.....100	5,000,000	q'arterly	Aug. '82 2	" " preferred.....100	1,175,000	semi-an.	Aug. '82 5
Elm River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Richmond & Petersb. 100	1,009,300	semi-an.	Aug. '82 2	Pennsylvania..... 50	4,501,200	.....	.....
Elmira & Williams p't* 50	500,000	semi-an	Nov. '82 1 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '83 3	Schuyl. Nav., com.*. 50	859,100	annual.	Oct. '82 50c.
" " pref. 50	500,000	semi-an	July '82 3 1/2	Rome Water & Ogden 100	5,293,900	.....	Jan. '83 3	" " pref..... 50	3,200,000	annual.	Oct. '82 1
Erie and Pittsburg*... 50	1,998,400	q'arterly	Dec. '82 1 1/2	Rutland preferred..... 100	4,000,000	semi-an.	Sept. '82 1				
Evansville & Terre H. 100	100,000	semi-an	Jan. '83 6 1/2								

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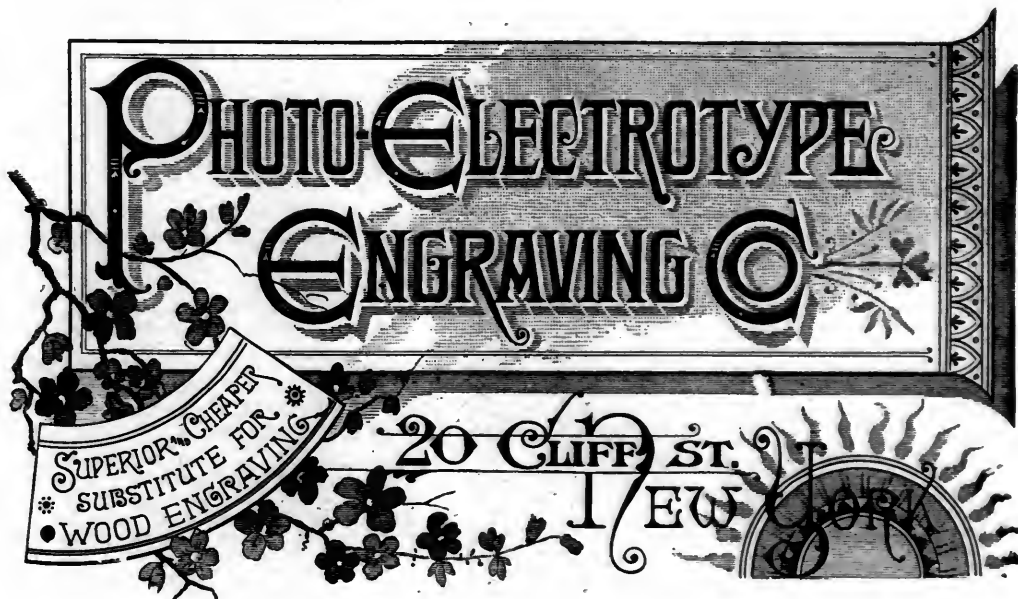
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Letters respecting the financial affairs of the Company should be addressed—

**H. F. WORRALL,** Treasurer, 8 Exchange Place, Boston, Mass.



## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,276	224,921	261,439	300,155	278,439	.....	.....
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,704,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,020,000	2,277,000	2,474,000	2,409,000	2,242,000	.....	.....
<b>CHEAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	635,307	7,553,988
1882.....	579,447	530,480	584,483	561,787	553,412	638,886	671,537	800,624	881,109	812,032	748,151	.....	.....
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	.....	.....
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,941	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,560,597	1,855,000	17,025,462
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,620,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	232,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,629	392,921	391,950	3,981,296
1882.....	307,498	315,100	405,779	350,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,056	202,299	177,161	229,858	228,653	221,320	211,614	192,623	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	.....	.....
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,655	643,417	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	138,284	154,717	168,798	148,913	154,917	155,030	184,347	258,628	239,196	238,442	249,252	.....	.....
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	728,173	689,387	695,371	674,603	674,749	673,746	752,251	813,600	828,238	865,325	732,144	.....	.....
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	102,085	103,677	100,064	109,846	190,125	272,114	247,332	225,678	200,450	156,697	.....
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,646	256,998	.....	.....
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	879,959	855,704	828,726	1,227,885	777,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,705	1,043,912	1,107,985	1,216,215	1,192,390	.....	.....
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,991	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,912	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,212	2,403,224
1882.....	150,676	158,590	148,166	141,957	134,378	136,184	136,398	140,443	160,031	265,201	295,107	307,643	.....
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,256
1882.....	150,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	.....	.....
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	247,764	237,729	2,809,255
1882.....	213,840	217,261	265,222	263,544	283,244	290,060	300,920	353,726	338,490	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,010	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,891	1,709,057	1,776,891	1,794,982	1,787,081	1,772,893	1,734,200	1,814,866	.....	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,925	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,762	509,683	667,488	592,435	550,225	526,685	.....	.....
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,984	216,210	217,705	412,024	393,260	434,085	534,363	583,655	475,610	434,331	4,044,576
1882.....	239,800	269,000	384,000	438,000	568,332	631,342	679,240	727,377	789,700	834,460	771,324	.....	.....
<b>PHILADELPHIA AND ERIE:</b>													
1880.....	224,307	245,372	327,678	334,947	311,470	3							

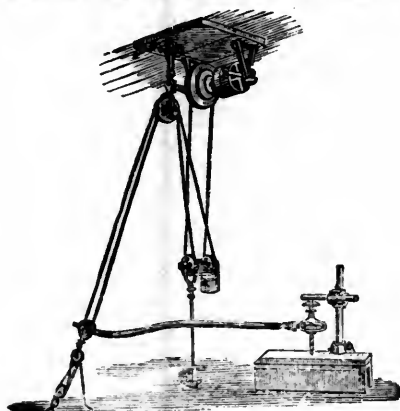
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## Inventors and Patents.

JUDGED by what seems to be current opinion, it would be inferred that the failures of inventors, at least of those who secure their inventions through the operation of the patent laws, were phenomenal. Why of all men who invest means—sometimes foolishly—the inventor in a patent should be singled out to point a moral is a matter by no means plain. Unquestionably, if all patents issued from the Patent Office are looked upon as evidence of so many attempts to establish a business enterprise on the basis of their existence, a large proportion of failures to get rich can be chronicled, but even then hardly more than could be found in other business enterprises. If the same argument that is applied so flippantly to the patentee's affairs is applied in the same way to general business affairs, the scope of the inquiry into the cause of the lack of success will be widened to an extent apparently not thought of.

But it is manifestly unfair to look at best upon more than a very small per cent of the total number of patents issued as evidence of an intention to establish a business or accumulate a fortune by their means. The great majority of patentees risk the small amount necessary to obtain a patent exactly as they risk similar amounts in other side or collateral issues, that is, for the chance of getting back more than they invest, and fully comprehending the probability of failure. Looked at in this light, the failures are about as numerous in one instance as in the other, but in one case they go upon record, while in the other they are unknown. A good many men can look back to a few dollars invested—sunk—in the Patent Office, and at the same time can contemplate several other enterprises that were balanced by profit and loss. It is sometimes noted as remarkable that so many who know substantially nothing of the matter at issue attempt to improve existing appliances, and undoubtedly a large per cent of the failure of patented devices to come to the surface the second time is due to this cause; but why this should be considered more remarkable than the fact that men are forever meddling with other things with which lack of acquaintance makes success at least highly improbable, no one can tell.

If in distinction from those who invest a little in patents in the way of their regular business, or who do a little in that way as a sort of side issue, the class that may be termed professional inventors be taken in comparison with those engaged in other business affairs, it will be found that both classes are subject to the same general laws of business, and about the same ratio and degree of success and failure will appear.

Individual judgment is likely to be at fault, or one is likely to invest unadvisedly in securing a patent exactly as in a hundred other ways, and the results will be in accordance with the quality of the judgment; but the idea that there is anything phenomenal in the failure of inventors is something for which it would be difficult to find any foundation.—*The American Machinist.*

## The Miller Padlock.

THE Miller Padlock, while it is comparatively new, has been in use long enough to demonstrate beyond any doubt that it is superior to any other padlock in the market. It is composed of brass, with springs of the celebrated Phosphor Bronze, is very substantial, well finished, the parts very carefully adjusted and



their arrangement such as to prevent the liability to derangement so common in many locks. The keys are small and flat, and the locks being entirely of brass there is nothing



about them to rust or become affected by the weather. For convenience, durability and security, they are believed to have no equal; in fact, they were pronounced by the committee of experts of the Franklin Institute, "practi-

cally unpickable." They have been used for several years with entire satisfaction as switch and car locks, and have proved themselves exceptionally durable. The casting of the consumer's name is a very desirable and attractive point, and prevents theft. Express companies and railroads, when they fully understand the merits of these locks, invariably adopt them, or refuse to do it merely because they dislike to sacrifice their other locks. But when they substitute gradually, as the old locks break, there is a positive gain at no sacrifice. Railroad men as a rule don't want locks until they see these; then they want to adopt them at the first opportunity.

The security afforded by the Miller Padlock, as is well established by their use by the revenue department and by the express companies, is the great matter, and there is no reason why such a superior lock, made so perfectly, should not supersede all old-style locksmith work, just as surely as the Elgin and Waltham watches have replaced ancient time-pieces.

The Miller Padlock is used by the following: D. and R. G. Railway Co.; D. and H. R. R.; Internal U. S. Revenue; J. Block, Russia; G. F. Swift; D. M. and M. R. R. Co.; B. and D. Railway; F. C. N. M.; Barkalow Bros., R. R. News Ag'ts, Omaha Adams Express, Penn. Div.; N. Y. P. and B. R. R. Co.; Adams Express Co., Balt. Div.; Texas Mexican Railway Co.; Railroad News Co., Chicago; Naugatuck R. R. Co.; the Union News Co.; N. Y. Cen. and Hud. Riv. R. R. Co.; Pennsylvania R. R. Co.

The way in which petroleum is burned in the fire-box of a Russian locomotive is thus described: The refuse is laid on the highest step of both ends of the fire-box, and drops from one step to the other, cascade fashion; no steam is introduced into the fire-box, as the refuse petroleum simply runs through pipes by gravitation, the tank carrying the petroleum being placed, not on the floor of the tender, but above the water tank, and should the petroleum be too thick, it is arranged that steam can be introduced through a warm pipe in this tank, the steam ultimately exhausting into the tender.

A Swiss engineer, named Fodor, at present employed on a railway in Finland, has lately perfected a discovery which, if all that is said of it be true, will prove an immense boon to railway companies. The invention consists of an indicator, of easy application to all existing wagons and locomotives, whereby their speed, the number of stoppages they make, the duration of the stoppages, and the times at which they are made are exactly and automatically registered. The apparatus has been tried and its efficiency proved on a railway in Finland and on a part of the line between Moscow and St. Petersburg.

The Court of Claims at Washington on the 15th inst. rendered a decision in favor of the Pacific Mail Steamship Company for \$83,333.33 in its suit against the Government under its contract for carrying the United States mails on the China line a number of years ago.

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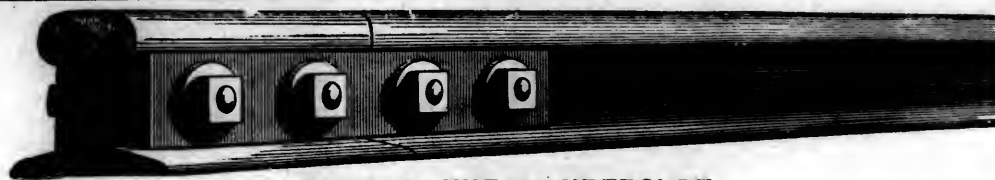
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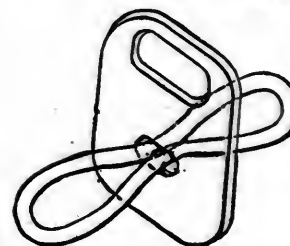
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The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six pounds.

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### The Patent Business Overdone.

WE learn from Washington that efforts are being made by patent solicitors and others to have patents, once issued, run the full seventeen years—the alleged reason being that several hundred patents per week are issued, and that many of them infringe on one another by want of novelty or insufficiently defined claims. "This," says the *N. Y. Times*, "indicates recognition, by the classes primarily interested, of what we have heretofore pointed out—that the patent system in this country has run into overdoing and abuses which have impaired, and will increasingly impair, its practical value."

"A patent is an official document meant and purporting to convey exclusive right 'to make, use, and vend' the particular thing for seventeen years; the actual protection depends upon the money resources, aggressiveness, and tenacity of the holder in fighting out his case. Having sold a certain industrial field, the United States declines to keep off trespassers or to warrant the title it conveys. This title is becoming less presumptive, and the presumption is even getting the other way in case of freshly issued patents which are not in a new field of art. Obviously, therefore, the value of patents depends entirely upon the intelligence, care, and strictness of their issue; failing, as far as they fail in this, they not only defraud those who buy them and invest capital on them as foundation, but stir up litigation. A patent is only the personal certificate of an examiner that the claim possesses patentable novelty, and is new, as far as his knowledge goes. The labor of examination grows with the increase of patents and applications, and the evils of the system grow with it. With nearly 300,000 patents and 500,000 applications and caveats on record in this country alone, and with some 400 applications a week calling for consideration, the examiners naturally and even necessarily limit their searches more and more to what is superficially within reach, especially as the notorious practice of the Patent Office is one of 'liberality.'"

"The actual result is what should be expected. Patent claims lap, interlace, and conflict so that it is sometimes most perplexing to decide when one is or is not 'materially,' 'substantially,' and 'in effect' the same as, or the 'equivalent' of, another. The same devices and combinations are patented over and over, sometimes at almost the same dates; or, if there are any slight differences, they are not distinguished in the language. Instances in support of this statement are at hand and could be given were it proper to give them; and the more any inquirer studies the system and the record of patents for any purpose, the more he will be impressed with its abuses. The Patent Office has been noted as the one department of Government which supports itself. It does more—it pays a profit of nearly \$200,000 a year, and has failed to pay a profit in only eight years since 1836; but its excessive 'liberality' resembles that of the spendthrift who wills generously what he does not possess. Government has less and less of exclusive right in its power to give. An uncontested patent has less and less value because a lawsuit is assumed to

go with it, provided it has any industrial worth.

"The needed reform is, first, a great decrease in issues by more severity in practice. Probably several examiners should go successively over the same course. Applicants should be much more strictly held to novelty, to more rigid distinguishing of new from old, to the operative character of their devices, and to their usefulness. If a man presents something which will not work as alleged, except in patient hands and under the most friendly conditions, a patent should be refused. If he presents something which, though practically useful, every individual can quietly construct and appropriate for himself, he should be told that it is not the province of the Patent Office to certify to rights which can by no possibility be followed up and protected. If he comes forward with a muzzle to keep sheep from biting, or a rifled cannon to shoot mosquitoes, he should be politely dismissed, as patents are not meant for foolish novelties. Patentable novelty is defined by law as being 'new and useful.'"

"There are rights of the public, moreover, which have been somewhat overlooked. It has been laid down as a rule that a patentee is entitled to a broad construction of his claim. Upon what ground is he entitled to a hair beyond the unmistakable letter of it? The law has given him leave to correct his omissions of what he should and might have claimed, or his misstatements of what he did claim, by subsequent reissue, and this, by the liberal and easy practice of the Patent Office, has been utilized to the expansion and rewording of old claims to adroitly cover what would have been claimed had it been thought of sooner, until the Supreme Court, in some recent leading cases, laid a heavy hand upon the abuse. It is also laid down as a rule that a patentee is entitled to all the benefits of his invention, though he may not have foreseen all of them. Why is he entitled to anything which he did not think of, foresee, invent, and exhibit? The patent is to reward him for thinking and foreseeing, and for doing this beyond other people. The degree of invention is an important omitted factor. What did the patentee of the gimlet-pointed screw, for example, do above others that he should have control for seventeen years of a device which doubtless simultaneously occurred to thousands? Or why should the individual who thinks to-day of something which a hundred others would think of next year be permitted to fence in the thing? Necessarily, priority must rule, but a uniform term rewards many (and those often the most original and deserving) too little, others far too much, and as to a large number creates little monopolies which harass without assisting more competent thinkers who follow. The rights of inventors have been talked of until the greater rights of the public have been forgotten. It is not that he who works out a discovery to-day, however meritorious, acquires thereby a 'right' of ownership in it, for his right in it is even less clear than the less recognized one in literary property, as his work is less peculiarly individual than that; how is it shown that the world is indebted to him for the invention, since somebody else might have done the same?

The foundation of patent systems is that the transient evil of monopoly is accepted for the greater public good, and the public right must override. Under that, it follows that the degree of invention—originality and usefulness combined—should be the measure of reward. Admit the principle, and it will be found possible to come nearer than now to realizing it in practice. Time being the best test of value, the English rule of requiring successive fees at intervals is well founded, and would have the good effect of removing a great number of patents which, having failed under fair trial, remain for annoyance. On the other hand, it is obvious that more strictness as to issuing would diminish litigation, seduce incompetent persons into fewer useless devices, and greatly enhance the value of patents by reducing their number, thus better rewarding genuine inventive services. Government might not get a revenue, on the present scale of fees, but the system was not established for revenue. Its defects of easy overdoing are increasing, and must soon become a subject for reform."

THE survey of the New York and Connecticut Air Line Railroad Company for a parallel line between this city and New Haven under the provisions of the general railroad law was filed in 1881, but was thrown out by the Railroad Commissioners of Connecticut, for the reason that it did not give the precise point in New Haven from which the road would start. A definite survey has now been filed, and the Commissioners have designated January 31 as the day for a hearing. This application takes precedence of the more recent one of the proposed Hartford and Harlem Railroad, and as the survey of the latter crosses that of the New York and Connecticut Company several times its interests may be materially affected should the Commissioners decide favorably upon the first application.

By an agreement arrived at between the board of supervisors of Botetourt county, Va., and the Richmond and Allegheny Railroad Company, the board agrees to release unto the company its taxes for the years 1881, 1882, 1883 and 1884, in consideration of which the company binds itself to build two iron suspension bridges over James River—one at Jackson and the other at Eagle Rock, below the mouth of Craig's Creek, at the completion of which, not later than eighteen months, the bridge at Buchanan, now a toll-bridge, is, like the other two, to be free to everybody. The company likewise binds itself to keep these two bridges in repair and to restore them in case they are destroyed. The bridges will cost about \$30,000.

JOHN RAYMOND died in Scranton, Pa., a few days ago, aged 88 years. In 1828 he built the first mile of railroad track that was ever laid in America for actual commercial business. This was on the Delaware and Hudson Canal Company's road between Honesdale and the coal mines at Carbondale, Pa. On this mile of track, on the 28th of August, 1829, the first locomotive ever run in America was tested. It was run by Horatio Allen, who is now living at East Orange at the age of nearly 90 years.

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## Liability of Sleeping-Car Companies.

THE Supreme Court of Indiana has just handed down a decision in a sleeping-car case, in which, as recited by the Court, a passenger paid for and occupied a berth in a sleeping-car, and during the night his watch and money were stolen from his berth. On the trial of the action brought by him to recover the value of his property, he proved that the sleeping-car conductor who had charge of that car and the next one was absent for eighty-four miles during the night, leaving his car in the charge of

the conductor of the other two cars. There was a porter to each car, but his duties would not allow him to watch over the occupants and their property. A judgment was got by the plaintiff, and the company carried it to the Supreme Court of Indiana, which affirmed it. Judge Howk, in the opinion, said: "A sleeping-car company is not subject to the liability of an innkeeper or common carrier, but it is bound impliedly to see that the person and property of its patrons are secure whilst they are asleep. It has been decided that a steamboat company is responsible for property stolen from the stateroom of a passenger whilst he is asleep, if he has been duly careful; and the patron of a sleeping-car company holds a similar relation with the steamboat company. The absence of the conductor was clearly such negligence that the company must pay the plaintiff for his loss."

## Expiration of Patent does not Extinguish the Trade-Mark.

THE case of the Singer Manufacturing Company vs. Loog was recently determined by the House of Lords, England. It was shown on the trial that after the expiration of the patent for the Singer Sewing Machine the defendant sold in England machines made at Berlin, which had on them the name of "Singer" as a designation, and a suit was brought to restrain the use of the name on the ground that it was a violation of the plaintiff's trade-mark. The suit was carried to the House of Lords for final adjudication, and Lord Chancellor Selborne said: "There is a distinction between the character of the machines and the reputation of the plaintiff as a manufacturer of them. The defendant—the patent having expired—can make the machines and put a designation on them to show their character, and the plaintiff cannot prevent this and thus establish a monopoly. But the defendant has no right, when designating the sort of machine he sells, to call it a 'Singer' machine, for that is clearly the trade-mark of the plaintiff. In using his designation the defendant has the right to the terminology common to the trade, provided he does this in a fair, distinct and unequivocal way."

THE Chicago office of the American Brake Company has been located at No. 234 South Clark street—Grand Pacific Hotel. The officers are: President, D. P. Slattery; vice-president and general agent, John B. Gray; secretary and treasurer, E. B. Leigh; superintendent, S. W. McMunn; Attorney, Albert Blair; manager, W. R. Crumpton. Mr. Crumpton was formerly division superintendent of the Chicago, Burlington and Quincy Railroad. His long experience and well-known ability as a practical railroad man will make him a valuable acquisition to the company. His headquarters will be at the Chicago office.

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### A Steam Man.

CAPTAIN ROWE, who lives in an old unused steam-tug on the Schuylkill River near the the Wissahickon landing, has invented a machine made of iron resembling a man, which is intended to walk and run and haul, but not to talk, though it may whistle and drink and smoke, and chu-chu-chu to back'er. Captain Rowe's boat is represented as a queer combination of dwelling-house, machine shop, nursery and steam-tug, and the Captain is said to be as queer as his boat. He asserts with a great deal of confidence that in a few weeks he will have his steam man walking about the streets of Philadelphia, strong enough to draw a horse-car and swift enough to distance the fleetest runner. Part of this machine is stowed away in the boat at Wissahickon and the rest is at a Sixth Ward machine shop in Philadelphia, where Captain Rowe is employed as a machinist. The head and breast of the machine-man are at Wissahickon ready for use, the arms and the lower part of the body being at the shop.

When the machine is put together it will resemble a short, thickset man in ancient armor. The head is unusually large and the chest full and broad. The boiler and furnace are in the back of the machine, the spiral tubes in which steam is generated ending in the shoulders. The smoke passes out through the top of the head, heating in that manner small reservoirs of water in the neck and part of the head and back.

The machinery is in front, below the chest. Two cylinders of ingenious construction furnish power to a series of strong rods and cranks extending downward into the legs and feet. Like the engines of a stern-wheel steamboat, these cylinders work with alternate motions and form the foundation for the forward and backward steps. The motions of the arms are regulated by cogs and cams connecting with pitman cranks. The forearms and hands are provided with strong rubber cushions and springs.

The machinery for the feet is not yet completed, several changes in the springs regulating the action of the ankles and insteps having been determined upon a few days ago. Captain Rowe, at the suggestion of an intelligent machinist at the shop, decided to substitute strong Para rubber for brass in two of the ankle springs, thus securing a much easier step when the machine is in motion. It was feared that brass would break when shaken by the motion of the cobblestones.

Captain Rowe has been working on his steam man for many years, and judging from imperfect tests made last November he feels confident that his machine is now perfect. Twelve years ago he built a steam man from crude and imperfect ideas, but did not meet with much success. The machine, when tied between the shafts of a wagon, would walk in a feeble and uncertain manner. It would not stand alone, and for this reason was of no value. People laughed at the idea then and ridiculed the invention. For several years Captain Rowe pondered on the problem of equilibrium, and in his experiments wasted the greater part of a legacy

bequeathed to his wife by a cousin, who had made a large amount of money in the Pennsylvania oil regions. Failure after failure made Captain Rowe morose, and he soon became mildly insane on the subject of his invention. During the years that followed, Mrs. Rowe supported the family with what little money there was left. She died two years ago. She left three children, a boy fourteen years of age and two little girls, mere babies. The boy, now sixteen years old, has a mania for invention. He spends his time in the boat at Wissahickon working at wheels and cranks, and in making charcoal drawings on yellow paper bags. The little children, hardly able to care for themselves, are left alone in their strange home all day while their father is at his work.

### Liability of a Carrier Beyond his own Route.

A DECISION was rendered by the United States Supreme Court at Washington, on the 8th inst. in the case of the Michigan Central Railroad Company, plaintiff in error, vs. Paris Myrick, for the use of the Commercial National Bank of Chicago. The question raised by this case is whether a railroad company, in the absence of a special contract, is responsible to a shipper for the safety of freight after such freight has been transferred by it to another railroad company for transportation to its place of destination. The Court holds—first, that in accordance with the common law rule, the carrier is liable only to the extent of his own route, and for safe storage and delivery to the next carrier; second, that the ticket or bill of lading given to the shipper by the railroad company in this instance was not a through contract, whereby the Michigan Central Company agreed to transport the freight in controversy to Philadelphia. The judgment of the Court below that the receipt did constitute such a through contract is reversed, and the case remanded for a new trial. Opinion by Justice Field.

### The St. Gothard Tunnel.

The recent opening of the St. Gothard Railway through the Alps has moved Consul Byers, of Zurich, to write a sketch of the great tunnel. The pass of that name is over the highest mountain chain in Europe. The old post road, commenced in 1820, 7,000 feet above the sea in places, was eighteen and one-half feet wide; it crossed gorges, clung dizzily to steep mountain sides, and was roofed over where most threatened by avalanches. When the first railway was opened, in 1846, from Baden to Zurich, it was proposed to ask concessions to enable the company to attack one of the high passes, and in 1863 a union, or society, for the purpose was effected, upon the basis of an estimated cost of \$37,400,000. In December, 1871, the St. Gothard Railway Company was organized, \$6,800,000 stock and \$13,600,000 of bonds were issued, a contract was made calling for completion in eight years, with a forfeit of \$1,000 for each additional day, and a bonus of \$1,000 for each day gained upon the contract time. Work began in the summer of 1872, and it was soon

discovered that the estimates were wrong, and that \$57,800,000 would be needed to carry out the plan; a crisis followed, and the enterprise seems to have been saved only by what had already been invested in it, leaving no way out but to push ahead. The railway proper extends 113 miles from Immensee, in Switzerland, to Chiasso, in Italy, and more than one-fifth of the whole line is in tunnels—fifty-six in number; many of these are not straight, but actually spiral, accomplishing heavy ascents in short distances, and there are also many lofty viaducts, bridges and complicated galleries. The total length of tunneling is twenty-three miles. The main or great tunnel is nine and one-quarter miles long, although others, exceeding 6,000 feet, might be thought noticeable elsewhere. The great tunnel is twenty-six feet wide and nineteen feet high. The modern boring machines were worked by air compressed by large turbine wheels driven by the rapid River Reuss. The air was carried from the compressors outside to the borers within the tunnel in iron pipes of six inches diameter, and the escaping air served an indispensable purpose in ventilation; 3,500,000 feet of compressed air were daily thus delivered and set free, pushing back and out of the tunnel the bad natural gasses, with those set free by the dynamite and thrown off from animals and workmen. Fifty drills were worked; the usual daily advance was twenty-one feet, working from both ends; and the whole excavation was lined as fast as made with a circular tube of masonry, eighteen to thirty inches thick. The workmen were principally Italians, who worked eight hours a day, receiving sixty cents to \$1.20 per day (mostly the former), boarding themselves, and living chiefly on meal porridge; yet most of them are reported to have saved and sent home to their families a part of this pittance. The tunnel cost 310 of their lives, and wounds were inflicted upon 877. The final actual cost of the tunnel and railway, exclusive of rolling-stock, is now reported at something over \$40,000,000.

### The New Route to California.

THE new southern route to California is at this season of the year the most agreeable. It avoids the cold and snow of the North, and necessitates fewer changes of cars than any other route. Arriving at St. Louis in 36 hours from the East in a through Pullman car, the passenger breakfasts at the Union Depot, while the porter removes his effects to the new Pullman sleeping-car of the Iron Mountain and Texas and Pacific route, which leaves in an hour for San Francisco, passing at once south through Arkansas, and west through Northern Texas to Deming, New Mexico, where the Southern Pacific sleepers await to bring him to San Francisco, arriving there on the afternoon of the seventh day. The possibilities of Texas, New Mexico, Arizona and Southern California for sport, pleasure and health are but beginning to be known; their development in mining, agriculture, cattle and sheep raising are already attracting attention. This is a delightful trip, and can now be made under the most favorable circumstances.



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**Overworking Railroad Employees, Etc.**

Gov. BUTLER, of Massachusetts in his Inaugural Address on the 4th inst., said:—

"Our railroads are working in a manner creditable to themselves and the State as carriers of passengers; certainly so far as the safety of the general public is concerned. There is one matter, however, which I think the managers of every well regulated railroad will agree with me needs attention, the overworking of railroad employes who have to do with the running of trains, whether on them or as switchmen, gatemen or station men. Faithfulness, care and activity in all these are imperative for the safety of travelers. On some railroads these men work too many hours, and a number of accidents occur from their inactivity and exhaustion from this cause.

"I suggest that legislation be had by which no employe connected with the running of trains on any steam railroad should be employed more than ten hours in any one day, with a proper interval for food, except in case of accident or emergency. This would be economy in the management, because, to say nothing of regret for loss of life and limb to the passengers, a single accident would cost the road much more than an amount sufficient to duplicate even, the salaries of such employes for a considerable length of time. To make this law self-executing would only require provision that in case injury came from the working of a train where any one connected with it had been employed more than that number of hours, such fact should be *prima facie* evidence of negligence on the part of the road.

"The number of employes injured and killed during the year calls for legislative action. During the last year 198 were hurt on the roads in this State, of whom 56 were killed. Nor is this an unusual number of such fatalities. A very considerable portion of these accidents happened in the coupling and uncoupling of freight cars. Are not such accidents preventable? If so, preventable accidents become crimes. If railroad managers were as careful of the lives and limbs of their employes as the verdicts of juries have made them of the safety of their passengers, some means of automatic coupling and uncoupling of cars would have been adopted. May not legislation require it?

"A part of this carelessness as to the safety of the employe has arisen from the interpretation of the law that employes insure each against the carelessness of the other, and the company is not liable. How far this rule ought to extend when the employes are co-operating together to perform a given service for the road at the same time is one question, but quite another when the employes are not so engaged. I submit the rule ought not to apply in the latter case. For an example, if an employe is riding in the car on the business of the company, or his own business, by permission of the company, going to his home, which privilege may in fact be a part of his compensation for services, he having nothing to do with the working of the train, should he not rather be considered a passenger when the rules of law are applied to him? There are foreign railroad cor-

porations operating trains within this Commonwealth. Would it not be better that some legislative provision should be made requiring them to give security to indemnify any person injured by their operation? There are claims now existing where there is practically no remedy for such class of injured persons."

**Surname of the Royal Family.**

At dinner, the other night, the conversation lapsed, as it sometimes will lapse with the best, into questions hardly distinguished from conundrums. A celebrated historian was present, and I put the question to him which I know has puzzled a great many people at different times. "What is the surname of the royal family?" "Guelph, of course." That is the usual answer, and it was the historian's. I ventured to suggest that, although the royal family are Guelphs by descent, her Majesty's marriage with Prince Albert, of Saxe-Coburg, must have the effect which the marriage of a lady has in all other cases, and that the surname of the present house must be the Prince Consort's. But what is the surname of the Prince Consort's family? Simple but staggering. No one knew. All guessed, and all were wrong. I happened to have looked up the subject a few months ago, so I knew the name was "Wettin." Of course no one had heard it before. Everyone smiled at the horrible idea of the Guelphs being reduced to Wettins. The point was referred to Theodore Martin. "You are quite right," said the graceful biographer of the Prince Consort; "Wettin is the family name of the House of Saxony, to whom the dominion of Saxony came in the year 1420. The King of Saxony and the minor princes of the house of Saxony are therefore all Wettins, or German Wettiner."—*Whitehall Review*.

**When a Conductor is Justified in Ejecting a Passenger.**

In the case of the Delaware, Lackawanna and Western Railroad Company vs. William Pease, the Court of Common Pleas, General Term, has reversed the decision of the lower court, and ordered a new trial. The facts of the case are as follows: Wm. Pease took a train on the Delaware, Lackawanna and Western Railroad on the 1st of January, 1881, to go from Hoboken to Montclair. He gave the conductor a ticket for a passage from Montclair to New York. The conductor refused to receive it and demanded his fare. Mr. Pease refused to pay and the conductor directed the brakeman to put him off. The latter did so, in spite of active resistance from Mr. Pease, who before he was ejected finally offered to pay his fare, but its acceptance was then refused by the conductor. The dispute commenced while the train was in or near the tunnel beyond Hoboken, but Mr. Pease was put off a short distance beyond a regular station. He sued the company for damages and obtained a verdict in the Court of Common Pleas for \$3,000. From this judgment the company appealed to the Common Pleas, General Term, which Court handed down a decision on the 11th inst., reversing the judgment of the Court below and ordering a new

trial. Judge J. F. Daly, who writes the opinion of the Court, says:—

"If the train arrived at a regular stopping place, and while there the conductor proceeded to eject a passenger for non-payment of fare, the latter might offer to pay before he was actually ejected and such payment should be received. But if the stoppage of the train was for the sole purpose of putting the passenger off and he had rendered the stoppage necessary by a factious refusal to pay the fare he would not have the right to tender the fare and continue his trip after having caused such an interruption. \* \* \* It can make no difference in principle whether the train had proceeded a longer or shorter distance when it is stopped again, nor whether the second stoppage was made while it was within the limits of the ordinary stopping place. It is the fact that a stop has to be made through the pertinacity of the passenger in wrongfully refusing his fare. That determines the question."

**Making a Barrel Around a Bunghole.**

MR. MARK L. DEERING, mechanical engineer, of this city, has recently taken out a patent for a barrel without staves or hoops, all in one place. The material he uses to make this seamless barrel is wood pulp. A certain amount of pulp is placed in an iron cylinder, the inside of which is shaped exactly like a barrel. This cylinder is made to revolve by an ingenious arrangement both ways; that is, the ordinary way that a barrel would revolve, and revolve at the same time head over head at right angles, at about one hundred revolutions a minute. The centrifugal force of this double revolution throws the pulp equally in every direction, spreading it, so to speak, equally all over the inside surface of the cylinder. After being revolved in this manner for three or four minutes air is then pumped through the bung (which is made tight around the pipe conveying the air) till a pressure of 100 pounds to the inch is obtained. This is done without a cessation of the movement of the revolving cylinder. The pressure of this air squeezes all the water in the pulp through the brass lining of the cylinder, which is perforated with minute holes, and is carried away in the grooves of the iron cylinder. After being revolved for three minutes under this pressure the two halves of the cylinder are opened and a perfectly shaped barrel is taken out, all complete, with heads in, which is laid aside for twenty-four hours for the purpose of being seasoned, when it is then placed in a drying-room heated by steam to 160 deg. of heat, and kept there for about three days, when it is taken out all finished for the market.

A STATION-MASTER in India telegraphed 200 miles to the central authorities: "Tiger jumping about on platform. Please telegraph instructions." The fact is that the station-master was unable to get to the signal station owing to the presence of a tiger on the platform and in order to avoid an apprehended collision he telegraphed to the head office for instructions to be sent to the next signal box that an approaching train might be stopped in time.

# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 4.]

NEW YORK, JANUARY 27, 1883.

[WHOLE No. 2,439.—VOL. LVI.]

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matter which the readers of such a paper as this are gratified to find within its columns.

## INCORPORATION.

THE Yellowstone National Park Improvement Company has been organized under the laws of New Jersey, with a capital of \$2,000,000. Its incorporators include Rufus Hatch, Roscoe Conkling, General James A. Williamson, of Boston; Richard T. Merrick, of Washington; Frederic E. Church, the artist; J. B. Houston, president of the Pacific Mail Steamship Company; Aaron J. Vanderpoel, Judge John R. Brady; Samuel W. Allerton, of Chicago; C. M. Loring, of Minneapolis, and other well known men in various parts of the country. The officers are: Rufus Hatch president, C. T. Hobart and F. E. Church vice-presidents, C. E. Quincy treasurer. The Farmers' Loan and Trust Company of New York are the financial agents of the company.

ARTICLES of incorporation have been filed in the Recorder's office at Springfield, Ill., by the Illinois Northern Railroad Company, which is to be built from Peoria northward to Milwaukee, Wis., via Sterling. The capital stock is fixed at \$10,000,000.

At a meeting of the directors of the Springfield and St. Louis Railroad Co., held in Litchfield, Ill., articles of incorporation were adopted changing the name from the Springfield and St. Louis to that of the Chicago, Springfield and St. Louis.

## CONSTRUCTION.

THE Oregon Short Line Railroad will be completed to Wood River Junction by February 1.

A PARTY of surveyors are going over the proposed route of the Meridian, Gainesville and Warrior Coal Fields Railroad.

A SURVEY of the Reading, Marietta and Hanover Railroad has been ordered from Chickies, Lancaster county, across the Susquehanna river to York.

THE Fort Scott and Wichita Railroad is now built and running for 130 miles—from Fort

Scott to El Dorado, Kansas. But thirty miles more are to be built to complete it.

ONLY about 30 miles of the Georgia Pacific Railroad remain to be completed—between Birmingham and Anniston. It is expected to have the road completed to Birmingham within the year.

THE Bridgton and Saco (Me.) Narrow-Gauge Railroad was completed and formally opened on the 20th inst. The road is thoroughly built and finely equipped, and will be opened for business on the 29th inst.

TUNNEL No. 2, on the Oregon and California extension, was finished on the 9th inst. The track is now laid to the fifty-second mile, and will be opened for traffic to the sixty-seventh mile, near the stage road, about the 10th of March.

RICARDO OROZZO, Chief Engineer of Grant's Mexican Southern Railroad, says the time for the construction of the road has been extended six months, and that both the General Government and the Government of the States through which the road passes have offered subsidies.

THE New River Railroad, a connection of the Norfolk and Western Railroad, running into the heart of the rich mineral regions of Southwestern Virginia, which was formally opened for traffic on the 17th inst., will for the present only run trains from the junction with the Norfolk and Western, at New River, to Wenonah, 28½ miles, and no trains exclusively for passengers will be run. Passenger coaches will be attached to freight trains for accommodation of travel. It is not expected that the road will be open through to Pocahontas, its western terminus, before the first of March, when the movement of coal will begin.

At a meeting of the directors of the Northern Pacific Railroad Company on the 18th inst., Gen. T. F. Oakes, the vice-president, presented a report of the progress of work. He said the track from the east had reached a point 9¼ miles west of Livingston, at the head of the Yellowstone Valley, and from the west it was laid to the 345th mile-post east of Wallula Junction. A little over 300 miles of road remained to be finished, of which 250 miles were graded and ready for the track. The Mullen tunnel, near Helena, Montana, was pierced 2,765 feet, leaving 1,085 to be cut. Work in the Bozeman tun-

nel had advanced 694 feet, and 2,916 remained to be cut. A temporary track was being laid over the mountains at this point pending the completion of the tunnel. The coal-bunkers at New Tacoma, holding 3,000 tons of coal, from which shipments to San Francisco would be made, were finished. The total number arriving at Portland last year in excess of the departures was 15,113. The estimated grain surplus next season for Oregon and Washington Territory was from 150,000 to 200,000 tons. There was an increasing cattle business in western Washington Territory and northern Idaho. The inaugural trip to Alaska would be made in June. The steamers would start from Portland.

THE following well-known contractors, with a full force of men and horses, are vigorously engaged in the work of construction on the Canadian Pacific Railway between Prince Arthur's Landing and Nepigon: 1st section, Syndicate; 2d section, Macdonell & Fay; 3d section, Mathew & Brown; 4th section, Conmee & Maclellann; 5th section, Dwyer & Doyle; 6th section, Marvin Burke. The principal structures on the line will occur at the following crossings: Nepigon, Trout Creek, Sturgeon, Woll, Pearl, McKenzie and Current rivers. Some of these spans will be very considerable, ranging from 220 feet, with trestle or other approaches, down to at least 80 feet, on rock base.

## ORGANIZATION.

At the recent annual meeting in Portland, Oregon, of the Oregon Short Line Railroad Company, the following persons were elected directors: S. H. H. Clark, Thomas L. Kimball, Andrew J. Poppleton, D. P. Thompson, B. J. Pengra, M. S. Burrell and Ellis G. Hughes.

At the annual meeting of the stockholders of the Portland and Odgensburgh Railroad Company, held in Portland, Me., on the 16th inst., the old board of directors was re-elected, with Samuel J. Anderson as president, Charles U. Foye clerk, John W. Dana treasurer, Jonas Hamilton, superintendent John F. Anderson chief engineer.

At an adjourned meeting of the stockholders of the Cincinnati Northern Railroad Company, held in Cincinnati on the 16th inst., the following directors were elected: Gabriel Netter, Ed-



ward Colston, B. J. Bachmann, Nelson Perin, Albert Netter, H. D. Hyde, G. W. Ballow, J. N. Kinney, E. B. Phillips, Edgar M. Johnson and John Ryan.

THE directors of the Delaware Western Railroad Company have elected W. H. Ijams treasurer, W. T. Thelin auditor, and John C. Farrar cashier. Messrs. Ijams and Thelin hold corresponding offices in the Baltimore and Ohio Railroad Company. In February the Delaware Western will consolidate with the newly organized Baltimore and Philadelphia Company.

THE directors of the Woodstock Railroad Company, recently elected, are: Albert G. Dewey, S. S. Thompson, Frederick Billings, Lewis Pratt, F. N. Billings, Justin F. MacKenzie, Chas. S. Raymond. The officers are: President Frederick Billings, vice-president Justin F. MacKenzie, clerk Charles M. Marsh, treasurer and superintendent James G. Porter.

THE directors of the Philadelphia and Gray's Ferry Passenger Railway Company, elected on the 16th inst. are: Matthew Brooks, J. Crawford Davis, Thomas Woodhouse, Oliver Harkinson, J. Hicks Conrad, James McManes, William Dulles and Richard Dale. The officers are: President, Matthew Brook; treasurer, J. C. Dawes. The number of passengers carried was 2,684,496.

At the annual meeting of the Greensburg, Vernon and Rushville Railroad Company, held at Greensburg on the 20th inst., the following directors were elected: M. E. Ingalls, B. S. Cunningham, A. R. Forsythe, of Cincinnati; W. W. Hamilton, J. E. Robinson, of Greensburg; F. Hall, Rushville; Horace Scott, of Louisville. The directors elected Horace Scott, president; C. Ewing, secretary; E. F. Osburn, treasurer.

THE stockholders of the Baltimore, Pittsburgh and Chicago Railroad Company, at their annual meeting held in Pittsburgh on the 15th inst., elected the following board of directors: Wm. E. Schmertz, S. Beymer, Wm. Vankirk, D. W. C. Carroll, John G. Holmes, Charles L. Caldwell, F. B. Laughlin, Joshua Rhodes, J. D. Long, James M. Bailey, Pittsburgh; and Jacob Frick, John Zimmerman, Wooster, O., James S. Robinson, Kenton, O. President Wm. E. Schmertz.

At the annual meeting of the Lehigh Valley Railroad Company, held in Philadelphia on the 16th inst., the following directors were elected: Charles Hartshorne, R. Asa Packer, William L. Conyngham, Ario Pardee, Wm. A. Ingham, George B. Markle, Robert H. Sayre, James L. Blakslee, Elisha P. Wilbur, Joseph Patterson, Garrett B. Linderman and John R. Fell. The officers are: Harry E. Packer president, Chas. Hartshorne vice-president, I. Chamberlain treasurer, J. R. Fanshaw, secretary.

At the annual meeting of the stockholders of the New York, Ontario and Western Railroad Company, on the 17th inst., the following directors were elected for the ensuing year: Edward F. Winslow, C. F. Woerishoefier, Horace Porter, Theo. Houston, C. N. Jordan, Henry Amy, Wm. Adams, George B. Greer, Charles J. Canda, Thos. C. Clarke, Alex. Taylor, Howard Mansfield and J. L. Nisbet. At a meeting of

the directors on the 18th inst., the following officers were chosen: Edward F. Winslow president, Theodore Houston vice-president, Conrad N. Jordan treasurer, John L. Nisbet secretary and assistant treasurer.

At the annual meeting of the stockholders of the Illinois and St. Louis Railroad at Belleville, Ill., on the 22d inst., the following directors were elected: Joseph W. Branch, Thos. McKissock, Adolphus Meier, John D. Perry, W. A. Hargadine, George Knapp, C. S. Greeley, A. C. Hucke, G. A. Koerner, Russell Hinckley, B. F. Switzer, T. Rainey, J. B. Beuchler, E. H. Wangelin, Thomas Winstanley. The board organized by electing Joseph W. Branch, president; Thomas McKissock, vice-president and managing director; P. T. Burke, secretary and treasurer, and C. H. Sharman, general superintendent.

THE stockholders of the Maryland Central Railroad Company held their annual meeting in Baltimore on the 15th inst., and re-elected the old board of directors, as follows: W. H. Waters, Wm. Gilmore, Thomas Armstrong, Charles W. Hatter, G. O. Wilson, John M. Dennison, Caleb S. Taylor, Henry R. McNally, Joseph M. Street, James P. Street, Caleb J. Moore, Eli Tucker, all of Maryland, and Foulk Jones, of York county, Pa. W. H. Waters was re-elected president; Wm. Gilmore, vice-president; S. G. Boyd, secretary, and Caleb S. Taylor, treasurer, *pro tem*. S. G. Boyd was re-elected superintendent.

At the annual meeting of the Citizens' Passenger Railway Company, of Baltimore, Md., held on the 15th inst., the following board of directors was re-elected as follows: Oliver A. Parker, George V. Keen, Joseph Friedenwald, Frederick Rice, Jacob Hecht, Hervey Shriver and John E. H. Boston. At the meeting of the directors immediately after, the following officers were re-elected: James S. Hagerty, president; G. V. Keen, treasurer, and John E. H. Boston, secretary. The reports of the secretary and treasurer showed the road to be in a flourishing condition. It is understood that the company contemplate the extension of their lines, and will ask permission therefor of the council when it assembles.

#### Railroads and Steamships in Japan.

THE railroad built from Sapparo to the seacoast in Yesso, by Col. J. A. Crawford, has proved so economical, and at the same time so satisfactory, that it is reported to be the intention of the Japanese Colonization Department to adopt the American system of railroad building in the northern part of Japan. An important commercial undertaking has just been consummated in Japan, in the shape of the Union Steamship Company. The company is backed by private and Government capital. It is intended to develop the trade of Japan, particularly at ports which have hitherto suffered from lack of steam communication. The capital stock is 8,000,000 yen (dollars), half subscribed by the Government and half by Japanese merchants and farmers. The latter part has already been paid in. The company's fleet will at first consist of forty steamers, about twenty of which will be running within eighteen months. The company will extend its operations to Hong Kong and the Chinese ports.

#### Railroads of Maine.

DURING the past year the following Railroad companies have been organized in Maine under the General Railroad Law of that State:

Kennebunk and Kennebunkport Railroad—To extend from a point near the drawbridge dividing Kennebunk and Kennebunkport Village, to a point on the line of the Boston and Maine Railroad near the depot of said railroad in Kennebunk. Length about 4½ miles; gauge 4 feet 8½ inches.

Monson Railroad—Extending from the depot of the Bangor and Piscataquis Railroad, called Monson Station, in the town of Abbott, to the village of Monson, through the towns of Abbott and Monson. Length, about 6 miles; gauge, 2 feet.

Green Mountain Railway—Between some point in the town of Eden or Mt. Desert to the summit of Green Mountain in Eden. Length, about 1 mile; gauge, 4 feet 8½ inches.

Bridgton and Saco River Railroad—This corporation organized in 1881, but did not locate its road till last year. It is now nearly completed from Bridgton Centre to Hiram, a distance of about 15½ miles. Gauge, 2 feet.

Regarding the management of the various railroad lines in the State during the past year, the annual report of the Railroad Commissioners, about to be issued, will say that all of them have been found in good repair and safe, and most of them in a high or advanced state of improvement, especially the principal lines. The policy of the officers seems to have been to have the improvement in track, rolling-stock, station houses, depot buildings and grounds adjacent thereto keep pace with the business prosperity of the roads. Such a policy cannot be too highly commended, and will not fail to be appreciated by the more observing and enterprising of the traveling and business public, and should be by all. The interests of the companies and of the people are reciprocal and mutual, and the intelligent and well-informed officials comprehend fully this fact. They have had the good sense to adopt and practice a liberal policy in their transactions with the patrons of their respective roads, and this has had the effect to disarm, in a measure, any opposition and prejudice against the roads and their management, so that the cry of "monopoly" or "oppression" is seldom if ever heard. With the exception of the county of Aroostook and parts of the counties of Hancock and Washington, the people and business enterprises are now well provided with railroad facilities by a system of connecting roads extending into every county and to nearly all parts of the State, and which may justly be regarded as among the safest, most honorably managed and efficiently operated of any in the country.

The remarkable exemption from any great and disastrous railroad casualty in this State still continues. Considering the large number of persons conveyed upon these roads each year, particularly upon the Maine Central, that during the summer season runs so many and such large excursion trains, this exemption from serious accident or catastrophe is little else than marvelous. The vigilance and fidel-

ity of the subordinates, as well as the faithfulness and efficiency of their superiors, merit special notice and the highest commendation.

Attention is called to the fact that the general railroad law in its practical workings is in several respects defective. For instance, the Bangor and Katahdin Iron Works Railway was organized to build a narrow-gauge road, but finally concluded to build to the standard gauge, when it was found there was no way under the general law to make the change except by commencing anew. A change is recommended by the Commissioners to meet such a case and another one mentioned.

From a tabular statement included in the report it appears that there are now 1,065.39 miles of railroad in this State, with a total length of 3,066.68 of the whole line operated. Thirty-nine companies are represented, though twelve of these have leased their lines to other roads.

#### Chicago City Railway Company.

At the annual meeting of the stockholders of the Chicago City Railway Company, held on the 10th inst., C. B. Holmes, president, submitted a report, in which he said that on the 28th of January, 1882, the cable cars first began running between Twenty-first street and Madison street; now the length of cables run is as follows: State street, from Twenty-first street to Madison street, 20,200 feet; from Twenty-first street to Thirty-ninth, 23,792; Wabash avenue, 23,608 feet; Cottage Grove avenue, 27,770 feet; State street loop, 4,361 feet; Wabash avenue loop, 4,339 feet; Twenty-second street, 2,684 feet; a total of 106,844 feet, or 20½ miles.

In addition to the forty-two grip cars finished early in the year for State street, there have been constructed in the shops of the company ten more grip-cars for State street and fifty for Cottage Grove and Wabash avenues, and fifty large and handsome passenger cars have been built, the best ever constructed by the company. After the completion of the cable system on State street there was a marked increase in the volume of travel, and the facilities, although enlarged in anticipation of such demand, proved inadequate. The growth of the lines has also been considered, and to meet these pressing needs the company is now constructing fifty more large passenger cars and fifteen grip-cars, which will be pushed to completion as rapidly as possible.

The company now operate 55 miles of track, the usual repairs have been prosecuted with promptness, and the road is in good condition.

The number of miles run during the year was 2,159,170 by cable and 2,151,064 by horses, and 38,386 by the Hyde Park dummy. From this it will be seen that, while the company has operated fifty-five miles of road, the car movement has aggregated 4,448,620 miles. Almost half the entire mileage was performed on the nine miles of cable road. Had the same work been done with horses it would have required 890 head, and is something of an indication of the facilities already furnished by the cable system to the public.

Mr. Holmes gives a detailed statement of the many drawbacks and hindrances encountered in introducing the cable system, and describes

many of the experiments tried. He says: "While the transmission of power by means of wire ropes is very old, the adaptation of cables to street-car locomotion is comparatively new, limited heretofore to San Francisco, and there under conditions which did not necessarily determine many important problems. At the outset of our operations we found that the splice used in San Francisco would not answer our purpose, owing, probably, to the much heavier work performed by our road and the greater length of our cables. Under the supervision of the manufacturers of our rope a splice was adopted which they considered the best, but a short trial proved it a failure. The San Francisco splice was then tried, but it also failed. Mr. Nash, who has had charge of our ropes, then introduced a method of his own, and with anxious interest its operation was watched until long-continued use has determined its advantage and success. The difficulty was to secure a splice which should not increase the size of the rope and expose the splice to abrasion by the grips, which should not draw out when a heavy strain was brought to bear, nor yet allow the ends to loosen when the action of the cars produced a slackness of the rope, one also which should not allow one strand to creep ahead of the others, and projecting up for the grips to cut or tear it up. If nothing else had been done during the season in this department than to discover a successful method of treating this important part of the system, it would have been a season well spent, for it is vital to the operation of the road. Another important matter was the handling of the cables so as not to produce crystallization. A new rope has been made so brittle in San Francisco by a short use as to snap like a glass when struck with a hammer. During all our operations, so far, we have not discovered any commencement of this much-feared condition."

In conclusion Mr. Holmes says: "From the experience of the last year there seems to be good ground to expect reasonably satisfactory returns from the investment. The public has hoped to find in the cable system seats for all or nearly all, and speedy transit. The former will be realized by increasing the number of cars, which is being done with energy, and the latter can be attained the moment the cars are supplied with automatic brakes and safety fenders, to do which every possible effort is being made. The whole system will work with greater ease by giving to the cables quicker motion, and this will be done as soon as the cars can be stopped quickly and with certainty, and so protected as to reduce accidents to the minimum."

A reporter learned from the company that the expenditures in and about the cable system have been between \$2,000,000 and \$3,000,000.

S. R. Cobb, ex-president of the company, when seen by a reporter immediately after the directors' meeting, said: "I am well pleased with the progress which our road has made during the last year. The cable system is working splendidly, and we consider it to be a grand success."

Daniel A. Jones, who is also one of the directors, said, in answer to the questions: "I consider the cable-car system to be a great suc-

cess. We are all satisfied with the progress that has been made thus far. To be sure we have had our backsets, and there have been many apparently insurmountable difficulties to overcome, but I think that the public will agree with me that we spare no pains to add to their comfort. As regards new extensions, I cannot say exactly yet. We shall commence work on the Archer avenue extension of the cable at an early date. We do not fear that the severe weather is going to affect our cable much."

#### National Exposition of Railway Appliances.

*From the London (Eng.) Railway News.*

We have pleasure in bringing to the notice of railway managers in this country a scheme for an International Exhibition of railway appliances, to be opened in Chicago about the middle of June next, under the auspices of the leading railways and manufacturing companies of the United States. We have of late years heard a good deal about the superiority of American designs and construction, and we trust that our home railway companies will not be backward in accepting the challenge given in the forthcoming Exhibition. Whatever the result of the competition may be, so far as comparative merits are concerned, there can be no doubt that much advantage would result to the manufacturers of both countries from a friendly and candid examination of the different systems in force, and the various methods adopted for arriving at the same end, or securing the most suitable and economical appliances and work. The promoters of the Chicago Exhibition seem determined that it shall be on a scale worthy of its character of international, and with this object they have secured buildings in the center of the business part of Chicago, convenient to the depots of the various railways. Very favorable rates will be granted by the railways of the country for the transportation of articles intended for the Exhibition, the net proceeds of which will be devoted to benevolent purposes connected with the railway service. Presuming that British work is duly represented, it would be a graceful act of international courtesy if some proportionate share of this benevolence were allotted to our Railway Benevolent Institution or some other representative society.

THE Marquis of Lorne and the Princess Louise and their party arrived at the Exchange and Ballard House, Richmond, Va., about 10 o'clock in the evening of the 15th inst. They left Louisville, Ky., by the Chesapeake and Ohio Railway at 9 o'clock in the evening of the 14th inst., and traveling rapidly crossed the Ohio River at Huntington, W. Va., on the following morning. The trip through West Virginia, up the western ascent of the Alleghanies, passing Charleston, the West Virginia coal fields, the White Sulphur Springs and down the eastern declivity of the Blue Ridge was greatly enjoyed by the party. They had a glimpse of Monticello, the home of Jefferson, and other of Virginia's historic places as they proceeded, and ran quietly into Richmond on time, ahead of the regular mail, without any mishap.



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columns any items of personal information, which may  
come to their knowledge, and are adapted to this de-  
partment. We aim to record all new railway enter-  
prises in the United States and Canada, and to note  
the progress of construction on all new roads and exten-  
sions; and we request all concerned in railway building  
to give us early information regarding the above, that  
our reports may be as complete as possible.

Subscribers are requested to report to our office any  
irregularity in receiving the JOURNAL.

Contributed articles relating to Railroad matters gen-  
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Agricultural development, and Manufacturing news, by  
those who are familiar with these subjects, are especial-  
ly desired.

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## PRINCIPAL CONTENTS.

Incorporation.....	73
Construction.....	73
Organization.....	73
Railroads of Maine.....	74
Chicago City Railway Company.....	75
EDITORIAL:-	
Are Railroads Public Highways?.....	76
Color-Blindness—A Rejoinder.....	77
The Heating of Street-Cars.....	78
Steel and Cast Steel.....	78
Interlocking Switch and Signal Apparatus.....	79
Stock Exchanges and Money Market.....	80-82
Railroad and Canal Dividend Statement.....	84
Railroad Earnings—Monthly.....	86
Another Attempt to Solve the Problem of Cheap Car Fares.....	88
Parlor Cars for the Canadian Pacific Railway.....	88
The Events of a Lifetime.....	90
Commerce of New York.....	92
New Brake for Street-Cars.....	94
List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, etc.....	96

## ARE RAILROADS PUBLIC HIGH- WAYS ?

IT will be remembered that during the hot  
months of 1882 there occurred in New  
York City what was popularly called by the  
newspapers a "Freight-Handlers' strike." The  
large number of men employed by the New  
York Central and Hudson River and the New  
York, Lake Erie and Western railroad compa-  
nies in loading and unloading merchandise into  
and from the cars of the companies, combined  
to demand an increase of their wages, which  
the companies refused to grant; and thereupon  
these laborers simultaneously abandoned their  
work, without notice, and refused to allow  
other laborers to take their places and proceed  
with the work without molestation. The re-  
sult was great loss to the railroad companies,  
and corresponding suffering to merchants in  
this city who desired to ship goods, and to  
other merchants in the interior cities and towns  
who very much desired to receive them. Of  
course there were not wanting some in the  
cities who contended that the railroad compa-  
nies should have yielded to the demands of the  
strikers for increased wages rather than subject  
their customers to annoyance or loss. Among  
these censorious people of course were to be  
found the spokesmen of the so-called anti-  
monopolist or agrarian party, who prosper by  
making believe that the law can be used to  
despoil corporations of their property without  
their consent and without compensation.  
Some of the dissatisfied firms, in order to test  
their rights and the responsibility of the com-  
panies, brought a suit in the State courts, which  
was disposed of by Justice HAIGHT in favor of  
the position of the railroad companies. The  
cause was appealed to the General Term, and  
has been argued by Attorney-General RUSSELL,  
assisted by Col. E. C. JAMES on behalf of the  
people, SIMON STERN, the attorney of the Thur-  
ber party, appearing in the case also; Judge  
SHIPMAN and ex-Senator ROSCOE CONKLING ap-  
pearing on behalf of the companies. Judge  
DAVIS delivered the opinion, which is very  
elaborate, and will attract attention among  
corporation counsel all over the country; as it  
discusses a very much disputed point as to how  
far the State can interfere with the practical  
operation of railroads.

The full Court is said to concur in the opin-  
ion which reverses the decision of the court  
below, and seems to be, so far as it goes, an at-  
tempt to stretch the power of the State over  
the railroad companies further than has yet  
been established. When a judge gives his de-  
cision, there is nothing to do but either to sub-  
mit, or to appeal to a higher court. But when

a judge gives his reasons for a decision it is  
competent for every one to examine his premi-  
ses and his reasonings to see if they are con-  
formable to the rules of logic, and conducive  
to the public welfare. In order that his posi-  
tion on this intricate subject may not be mis-  
understood, we append the following extract  
from the opinion:

"Railroads are in every essential quality public high-  
ways, created for public use, but permitted to be owned,  
controlled and managed by private persons. But for  
this quality the railroads of the respondent could  
not lawfully exist. Their construction depended  
upon the exercise of the right of eminent domain which  
belongs to the State in its corporate capacity alone, and  
cannot be conferred except upon a 'public use.' The  
State has no power to grant the right of eminent domain  
to any corporation or person for other than a public use.  
Every attempt to go beyond that is void by the Constitu-  
tion; and although the Legislature may determine what  
is a necessary public use it cannot by any sort of enact-  
ment divest of that character any portion of the right of  
eminent domain which it may confer. This character-  
istic of 'public use' is in no sense lost or diminished  
by the fact that the use of the railroad by the corpora-  
tion which constructs or owns it must from its nature be  
exclusive. That incident grows out of the method of  
use which does not admit of any enjoyment in common  
by the public. The general and popular use of a railroad  
as a highway is therefore handed over exclusively to cor-  
porate management and control, because that is for the  
best and manifest advantage of the public. The progress  
of science and skill has shown that highways may be  
created for public use of such form and kind that the  
best and most advantageous enjoyment by the public can  
only be secured through the ownership, management  
and control of corporate bodies created for that purpose,  
and the people of the State are not restricted from avail-  
ing themselves of the best modes for the carriage of their  
persons and property. There is nothing in the Constitu-  
tion hostile to the adoption and use by the State of any  
and every newly developed form or kind of travel and  
traffic which have a public use for their end and aim,  
and giving to them vital activity by the use of the power  
of eminent domain. When the earliest Constitution of  
our State was adopted railroads were unknown. The  
public highways of the State were its turnpikes, ordinary  
roads and navigable waters. The exercise of eminent  
domain in respect to them was permitted by the Con-  
stitution for the same reasons that adapt it now to the  
greatly improved methods of travel and transportation,  
and in making this adaptation there is no enlarged sense  
given to the language of the Constitution so long as its  
inherent purpose—the creation of public uses—be faith-  
fully observed."

It will be seen that the ground upon which  
Judge DAVIS rests the right of the State to in-  
terfere in the conduct of railroad transporta-  
tion, and to prescribe the duties of the com-  
pany both as to the compensation they shall  
receive for transportation and as to the wages  
they shall pay to their employes, is that of the  
right of eminent domain which is conferred  
upon corporations for quasi-public use. There  
is no question but that the power of eminent  
domain can be used only for the public use and  
benefit. The authority given to railroad or  
canal corporations to pass through private lands,  
tear down fences, and remove the superincum-  
bent vegetation, rests upon their public utility.  
Admitted that the right of way so obtained  
cannot be used for a thoroughfare, and that  
the public cannot be shut out from using it in  
the manner and time contemplated in the char-

ter; but it does not follow that the engines, the cars, the seats, the stations and buildings of the company are therefore at the mercy of the Legislature. Here is the fundamental mistake of many Judges who approach this subject. They confound the way and right of way with the implements and labor of those concerned in transportation. There is the same difference between the right of passage up and down a navigable stream and the vessels which ply upon it and the labor performed upon those vessels, as there is between the right of way of the railroad and the trains which run over it.

The reasoning of the Court of the General Term, that railroad corporations have been chartered and have undertaken to perform duties for the public in the ordinary legitimate and regular course of their business, is perfectly correct; that they have duties to perform in that respect is perfectly clear; but it is a wide step from that to say that the companies shall not receive as compensation what the service is really worth, or that they shall pay to any particular class of their employees more than the real value of the service rendered. There is a great confusion of mind growing out of the fact that an analogy is traceable between the functions of a railroad and those of a turnpike, a ferry, a grist-mill or wayside inn. Many of these in England, whose common law has given ours this squint, were derived from sovereign pleasure, and were to be used with reasonable regard for the public convenience. But it is stretching the doctrine too far to suppose that a party who puts up an elevator for the accommodation of his customers is subject to have his business inspected and interfered with, simply because it is of general public concern. The same doctrine, if pushed to its extremes, would justify interference with the baker or the farmer, the miner or the fisherman. It will not bear pushing any further; it is time there was a retracing of false steps.

The decision just rendered will, no doubt, be appealed to the Supreme Court; and may be expected to be reversed. The transportation interests of the country cannot be conducted upon any such basis as that suggested by Judge DAVIS.

SOME new and interesting features in the condition of the horse-car service on one line in New York City should be mentioned, as not only creditable to the enterprise of the company introducing them, but affording matter proper for imitation by other lines, so far as judicious and practicable in each individual case. We refer to the improvements on the Second Avenue Railway, which are three in

number. In this bitter weather, the statement that the Second Avenue horse-cars are comfortably heated, conveys an invitation to which the public who can use the line without going out of their way considerably, numerous respond. The stove is placed under the seat, and therefore does not occupy any of that space in the car usually devoted to the accommodation of passengers. As an experienced gentleman points out in another place, there is danger in heating street-cars by the use of stoves, but we have yet to learn that those of the Second Avenue Company have been at all endangered by the innovation, which, so far as we have been informed, works well. Our correspondent concedes the possibility of making provision for heating cars by means of stoves, without the danger which usually accompanies their presence in crowded vehicles; and he will permit us to add, that possibly the company named have succeeded in preventing that danger. To change the subject: On the Second Avenue line there is no opening and shutting of the front door of the car while in service, and consequently, there are no miserable and dangerous draughts, to excite the wrath, chill the blood and threaten the life of the unoffending passenger. Lastly, the conductor wears a badge during the whole time while on duty, and is certainly under recognition by the passenger as is the policeman on his beat. Manifestly, therefore, the necessity of any kind of fuss with this official, in case of misunderstanding with him, is prevented; and any disposition to impertinence and undue dignity on his part, very properly is checked by his consciousness that his number is distinctly knowable by all the persons under his care. The three innovations mentioned suggest matter for consideration by all street railroad men anxious to provide improvements on their lines.

#### Color-Blindness—A Rejoinder.

BY S. S. HERRICK.

AN article entitled "Color-Blindness Once More" appeared in this journal Dec. 30th, which contains several erroneous statements and conclusions. Some of its readers are too well informed to be misled by it, but it is to be feared that many might regard it as unanswerable, if left unchallenged. I have waited in the hope that some one would undertake the task, and now, concluding that no one else will give it attention, shall proceed to notice the weak points *seriatim*.

It is rather broadly intimated in the first paragraph, that the experts who are laboring to interest Congress in the matter of control of defective vision are aiming at "a good plum," which is a gratuitous and unwarrantable assumption. These experts are men of established reputation, successful in their private

business, and not mere adventurers. They claim no invention or discovery, but ask the recognition of established facts in adopting additional precautions for the safety of persons and property while in the care of common carriers.

The writer of the article declares that "what the people are most interested in, and what they are willing to pay for, is to know to what extent (if any) the public service is injured and the lives of people endangered on land and water by the employment of these men." Very well: but how is this to be known, without examining the men? Then if any be found defective, are they to be retained in responsible positions? Of what use the knowledge, unless it lead to some practical and useful result?

It is asserted that ophthalmic surgeons have discovered large numbers of color-blind men in positions of great responsibility, "but have not succeeded in showing that a single life or a dollar's worth of property has been destroyed in consequence of color-blind employees on railways or as pilots." I am not prepared to prove or disprove this statement, but would suggest that the experts have not had fair opportunity to assist in the investigation of disasters on lines of traffic.

In the next paragraph we are offered the fallacy that a man with perfect vision may become confused and then have no advantage over the color-blind man. Certainly, for that one occasion; but Mr. Huntington would hardly claim that a man habitually subject to confusion of his faculties should be put in a responsible place or allowed to remain there.

He is apprehensive that an expert might occasionally happen to be defective himself, and then nobody could possibly find it out! There is evidently some sacred mystery about this expert notion, as inexplicable as one's religious faith. Seriously, however, I never supposed that a man would undertake the office of examiner from an interior conviction that he had a divine call for it, which no one had a right to question, but presumed that the first step was to undergo an examination by an expert himself previously tested in the same way; and it may be presumed that the examiners, having reputation at stake, would not neglect a duty to themselves, which they would impose as a condition on others.

The following contains too gross an error to pass without notice. "Men who are color-blind will not give the proper name to these colors, but they know exactly what they mean, and that would seem to be all that is required." In the examination men are not asked to name the colors, but to recognize them by comparison with a standard. If they know what the colors mean, they are not color-blind, though unable to name them. Moreover, no one is to be condemned without examination by flags and lanterns, if he demands this test. In careful hands the worsteds detect him, and the flags and lanterns confirm the previous test, if the man has no prompting.

No expert fit to be an examiner would do a man injustice in applying the tests, and no humane railroad official would turn adrift a worthy man for a defect growing out of no fault of his own. It would be easy enough to find a suit-



able place for him, with a company important enough to organize a medical department. The wrongs and hardships which Mr. Huntington apprehends presuppose bad men for the exercise of the functions of control, both the medical experts and the managing officials. No mathematician is needed to estimate the probability of such a concurrence.

His closing sentence grants as much as experts claim, though not in exact terms: "When a man gets old he should be examined for amnesia, and in fact impaired vision should be looked for in persons of all ages, but when signals can be seen at a proper distance and their meaning understood, what more do we want in the line of vision?" Nothing more, of course; but we want no guesswork about it, and want the business in competent hands.

### The Heating of Street-Cars.

In a letter addressed to the editor of the AMERICAN RAILROAD JOURNAL, Mr. C. B. Clegg, of Dayton, Ohio, a gentleman largely interested in the street-car service of that city, says:

"I take it for granted that you favor the heating of street-cars. In this I not only think you are wrong, but such favor to emanate from New York, where legislation has been so active to promote the service in a sanitary manner, is somewhat surprising to me. I remember a few years ago, when an attempt was made to introduce stoves into the street-cars of your city, that there was a loud and prolonged out-cry against them, some of your best papers making strong protest, supported by the very best arguments why they should not be used. The space at best is limited, and the traffic so precarious and uncertain as to numbers and cleanliness, that, in my judgment, it is impossible to properly heat the car to the comfort of all; and I also believe the time is near at hand when the Boards of Health, in all cities where stoves are used in street-cars, will take the matter in hand, and by proper legislation, and for the best interests of the public, have them excluded.

"To look at the matter in as broad a sense as possible, there may be rare cases where stoves are admirable. Where cars run long distances into the suburbs or into the country, or sometimes from one town to another, in short, in all such cases when the traffic is not liable, from the nature of the circumstances, to suddenly and unexpectedly increase beyond the provision for it, it is then possible, probably, to so regulate the heat and atmosphere as to produce the least harm.

"I believe as a rule, street railway companies endeavor to provide ample accommodations for their travel, but in running through the crowded streets of cities there are many circumstances, over which they have no control, which tend to suddenly and indecently crowd the cars. Take, for instance, the Third Avenue line of your City, which upon its rush trips sends out from its stables a car every ten seconds, and yet they will be crowded at times. But whether this is the fault of the company or the people, one can not help but contemplate with a shudder, as he views it, what the probable consequences might be, if in addition to the promis-

cuous crowd, there was a stove in the car adding fuel to the already dangerous fumes.

"I give much time and thought to street railroading, and I desire, as far as lies in my power, to give our patrons the very best service possible, but I have yet to be convinced that stoves in the cars will, in any way, help me to that end. If I am wrong I can not know it too soon; neither would I allow, if I am making a mistake, any unnecessary delay in correcting it."

### Steel and Cast Steel.

THE growing importance and increasing employment of steel in machinery and ship building, and the frequent use of the term in speaking or writing of mechanical industries, have tended to confuse the popular ideas as to what steel is, and what steel was. The word itself conjures up ideas of cutting implements mainly, of a metal capable of being so hardened and tempered as to cut other metals, rocks, and almost all mineral substances, as well as to work wood and a hundred other soft materials. And when steel is spoken of as being used for shafting, for heavy castings, for plates of which to build up the sides of ships, for railroad rails, and similar purposes, the ordinary and unmechanical mind is confused, and doubts the economy and the advantage of using the material for such purposes. Perhaps a brief description of processes may serve to make distinction.

For the production of cast steel the best Swedish iron is used, that known to the trade as "Danemora iron" being generally employed, although iron possessing similar properties but from other localities is largely used. Bars about three inches wide by five-eighths of an inch thick are of a handy and much used size. These are packed in air tight chambers with fine charcoal, and so arranged that no two bars touch, and fires are kept up from nine to fourteen days by means of furnaces of anthracite coal. Bituminous coal also has been and is used with satisfactory results. Test bars may be drawn from time to time, until by the judgment of an experienced workman the cementation is complete. This roasting of the iron in combination with charcoal imparts to the iron a certain degree of carbon as compared with the other constituents, that has the effect to totally change its nature.

When removed from the cementation furnace the bars are covered with blisters, hence the name "blister steel" for steel in this condition. Formerly—within forty years—this blister steel was largely used by blacksmiths for purposes for which only cast steel is employed. In the "relaying" of axes, for instance, it was used, the quality of the steel being greatly improved by repeated hammerings after heatings.

The bars of blistered steel are very brittle, and are broken up into pieces of about one pound weight or less, put into crucibles of plumbago, and subjected to an enormous heat for from two to two and a half hours, and then poured into cast iron molds of cylindrical form inside, the ingot thus cast weighing about fifty pounds usually, although much larger ingots are made if the after nature of the work requires it, or the resultant product demands. If the top of the ingot, while in a fluid state,

does not sink in the center (the molds being placed on end while the steel is poured), it is evidence that the casting is unsound, and no after reheating and hammering can rectify the fault, the only remedy being to break up and remelt the honeycombed steel.

The ingots are reheated after being cast, and subjected to the hammer and then to the rolls. And in the form of flat and round bars, and rods, and plates, this product goes out to the world as cast steel, the great cutting material.

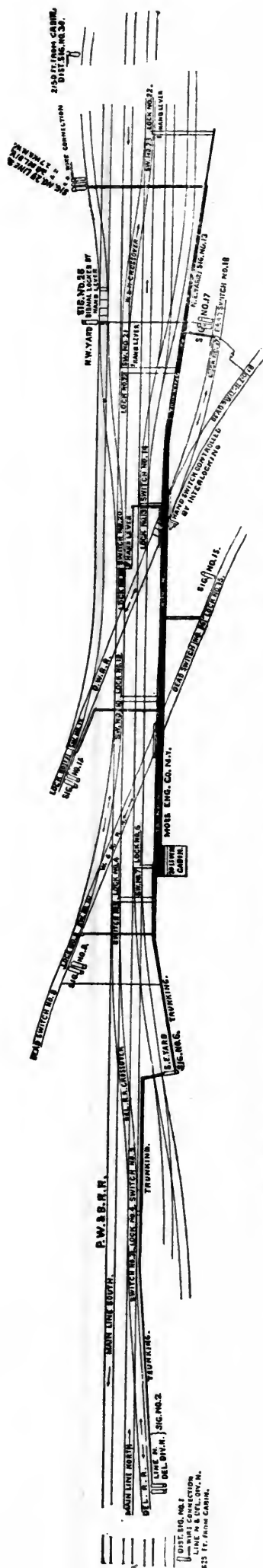
For the production of the steel used for building and common mechanical purposes and for railroads there are several processes, but they each bring about a similar result, and except for details of manipulation and employment of differing means, use the same materials. In some cases the steel is made from the ore, but in most from the iron (cast). The Bessemer process will probably stand as a sufficiently general type of the principle of "converting" to enable the reader to understand the difference between "steel and cast steel." In the conversion of iron into common, or Bessemer steel, the iron used is pig, or cast iron, and not wrought iron in bars. This iron is selected for the quality of its ore, and so mixed as to aid in the process of conversion and to produce satisfactory results. These particulars are unnecessary for the purposes of this article.

The iron is melted in a cupola just as it is in any iron foundry, and when melted is run into an immense pear-shaped or pitcher-shaped vessel suspended on hollow trunnions, through which a powerful blast of compressed air is driven by means of blowing cylinders at a pressure varying from fifteen to twenty-five pounds per square inch. This pressure is varied during the process, which for seven tons of melted iron would require fifteen or twenty minutes. This blast of air rushes through the boiling metal, burning out the phosphorus and sulphur, and a portion of the carbon, usually about 10 per cent. The loss of carbon is made up by the addition of a certain amount of *spiegeleisen* to the ingredients. "*Spiegeleisen*"—"mirror iron"—is an iron containing an unusual amount of carbon.

The converters are made of thick boiler iron, and lined with a cement of ground flint and quartz, fire clay not being sufficient to withstand the intense heat generated by the union of the oxygen of the blast with the sulphur phosphorus, and carbon of the metal. The end of the converting process is determined by the color of the flame rushing from the top of the converter. At first, when the blast is first put on, it is blue and smoky, afterward red, then graduating to yellow, and at last to pure white.

When the process is completed the blast of air is shut off, the immense pitcher is turned on its trunnions, its content poured into large ladles, which empty into iron molds, casting huge ingots, sometimes of a weight of 3,000 pounds. The after working of this Bessemer steel is similar to that of cast steel, a reduction by hammer and rolls.

It will be seen from these general descriptions that the production of "decarbonized," "crude," "low," or "Bessemer" steel and that of cast steel are different in materials used, methods employed, and in results reached.—*Scientific American*.



PLAN OF INTERLOCKING SWITCHES AND SIGNALS AT UNION JUNCTION, WILMINGTON, DELAWARE.

### Interlocking Switch and Signal Apparatus.

We purpose in this and succeeding articles, to give an account of the Interlocking Switch and Signal Apparatus manufactured by the PENNSYLVANIA STEEL COMPANY, Steelton, Penn. This apparatus possesses features which give it interest widespread as the use of railroads. A few introductory remarks on Interlocking switches and signals are desirable.

From the earliest days of railroads the contrivance of signals by which to instruct the persons in charge of trains as to the condition of the tracks, and to regulate the movements of trains, has engaged much attention, and in proportion to the number of trains passing a given point, the signal became important. Preliminary to signals, the switches and means for operating and controlling them claim attention; and the fatal facility with which the switches and signals by the usual method of operating them can be made to conflict and to cause enormous loss of property and life, despite the most complete codes of regulations, has been demonstrated so many times that the importance of a method of operating switches and signals that will ensure safety will be universally admitted. That such a system may also be made to reduce the cost of handling switches, should also receive due consideration. In fact it was the effort to reduce the cost of working switches and signals by concentrating the levers of a number of them so that one person could attend to them which produced after passing through many changes the improved system now called the Interlocking system.

The origin and progress of the Interlocking system are detailed in an interesting manner in "Barry's Railway Appliances" (a valuable English work published by Appleton), and will be found well worth perusing. As early as 1847 English railways began to concentrate switch levers and signal levers together, so that one person could conveniently work a number of switches and signals; and the economy and convenience of such an arrangement led to a general adoption. The danger of pulling the wrong lever by mistake soon became evident, and many ways of preventing such mistakes were ineffectually tried until Mr. Saxby, in 1856, introduced a system of combining the levers and connecting them in such a way that the signal levers could not be moved until the switches were set correctly, and the term interlocking was suggested by the locking mechanism employed. This term is now understood to apply to a system by which switches and signals are worked, from some point where a number of levers can be concentrated, in such a manner that no safety signal can be given for any track until the position of the switches is such that trains can go safely; and when the safety signal is displayed, none of such switches can be moved until the signal is made to indicate danger. The trains being moved in such cases only in obedience to signals.

The objects aimed at in such systems are that nothing may be left to the judgment of the switch operator, that following the obvious safety rule in opening a given course of moving switches first, locking the same next, and last

of all, setting the signals to go ahead which shall lock fast all the levers operating conflicting signals so that they cannot be operated; that a certain track being indicated to the operator to be opened for the passage of a train, the changing of switches and signals may so far as possible begin at the point farthest from said train, and end with the signal nearest to it; and that in all cases said signal shall be locked to indicate danger until the course of track to be opened shall be in order, and said signals be set for the train to proceed, and that the setting of said signal to proceed shall lock to danger all conflicting signals not already locked. The principle of Interlocking is applicable to the lever and signal of a single switch and may be extended indefinitely to suit any system of tracks. The greater the complication of tracks the greater the value of the interlocking system, because of the greater liability to mistakes of various kinds.

The adoption of Interlocking apparatus has for many years been by law obligatory on new railways in England, and on the older railways has been so generally adopted that by Reports of 1880 it appears that over eighty per cent of all the switches in England were worked by interlocking apparatus. In this country the government has never made any regulations contemplating the use of Interlocking apparatus, and owing to the great difference between the great railroad systems in England and those in this country, the necessity for such apparatus has been recognized to only a limited extent, and but few of our railways have experience in its use. The great advantages of safety and economy arising from freedom from accidents, at points where traffic was heavy, has led the managers to adopt Interlocking systems on some of our principal roads, to some extent, also, on the elevated railroads in New York city, and the traveling public are gradually gaining an appreciation of the usefulness and importance of such an improvement that will probably lead to very extensive use.

The Pennsylvania Steel Company, at their extensive works at Steelton, Penn., have established a department for the manufacture of Interlocking Apparatus which embodies the improvements designed by their engineer of Interlocking, Mr. A. G. Cummings.

One of the points that has been equipped with Interlocking Apparatus by the Pennsylvania Steel Company is shown in the accompanying plan of tracks at the Union Junction of the Philadelphia, Wilmington and Baltimore Railroad, at Wilmington, Del. This junction is one mile west of the passenger station, at the crossing (at grade) of the Wilmington and Northern Railroad, and of the Delaware Western Railroad, where the Delaware Railroad branches from the main line of the Philadelphia, Wilmington and Baltimore Railroad. Through trains pass this junction at lightning express speed. The main line is protected from crossing roads by dead switches on the crossing roads, by which it is made impossible for trains on the crossing roads to get in the way of the main line trains. There are in all fifteen switches handled and controlled, and three other switches not handled (owing to the infrequent use, or being required only for hand drilling), which are also perfectly controlled. Twelve facing point locks and seventeen signals are employed, some of them 2,150 feet from the signal tower. To operate the above, twenty-eight interlocking levers are used, with two spare levers in the frame for future improvements. At this writing, the apparatus at Union Junction has been in use nearly two years with perfect success, and it will probably repay any railroad manager to visit and study its workings.

(To be continued.)



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Jan. 23.

W. 17. Th. 18. F. 19. Sat. 20. M. 22. Tu. 23.

Adams Express.....	135	134 1/4			
Albany and Susq.					
1st mortgage.....					
2d mortgage.....					
American Express..	91 1/2	92	92	92 1/2	91 3/4
Burl., C. R. & Nor.	82 1/2	82 1/2			82 1/2
1st mortgage 5s.	101 1/4		101 1/4	101	
Canada Southern ..	70	70	70 1/2	70 1/2	69 3/4
1st mortgage guar	95 1/2	95 1/2	95 1/2	95 1/2	95 1/2
Central of N. Jersey	76	74 1/2	74 1/2	74	73 1/2
1st mort. 1890.....			118		
7s, consol. ass.....	111			110 1/2	
7s, convertible ass.			110		110 1/4
7s, Income.....	85	85			
Adjustment.....			106 1/2		
Central Pacific.....	85 1/2	85 1/2	85 1/2	84 1/2	83 3/4
6s, gold.....	113 1/2	114 1/2	113 1/2	113 1/2	114
1st M. (San Joa.)					109 1/4
1st M. (Cal. & Or.)	103				
Land grant 6s.....					
Chesapeake & Ohio.	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2
1st pref.....	34 1/2	34 1/2		35	34 1/2
2d pref.....			25 1/2	26 1/2	26 1/2
1st mort., series B	90 1/2	91 1/2	91	91	91 1/2
Chicago and Alton.	136 1/2	136 1/2		137	137 1/4
Preferred.....					
1st mortgage.....					
Sinking Fund.....					
Chi., Bur. & Quincy	125	125 1/2	124 1/2	124 1/2	123 1/2
7s, Consol. 1903..		127 1/2			127 1/2
Chi., Mil. & St. Paul	107 1/2	107 1/2	107 1/2	107 1/2	106 1/2
Preferred.....	122	122	121 1/2	121 1/2	106
1st mortgage, 8s.					
2d mort., 7 3-10s.				126	
7s, gold.....			128		127
1st M. (La. C. div.)				120	
1st M. I. & M. div.)					
1st M. (I. & D. ext.)					122 1/4
1st M. (H. & D. div.)					
1st M. (C. & M. div.)					
Consolidated S. F.				124 1/2	
Jhi. & North western	135 1/2	134 1/2	134 1/2	132 1/2	133
Preferred.....	149	149 1/2	149 1/2	147 1/2	146 1/2
1st mortgage.....					108 1/2
Sinking Fund 6s.					
Consolidated 7s.		133 1/2			
Consol. Gold b'ds			125 1/2	125 1/2	125 1/2
Do. reg.....			125 1/2		
Chi., R. Isl. & Pac.	126 1/2	126 1/2	125 1/2	125 1/2	123 1/2
6s, 1917, c.....	125	125			124 1/2
Clev., Col., Cin. & Ind.	80 1/2	81	79		
1st mortgage.....					
Clev. & Pittsburg gr.	140 1/2				141
7s, Consolidated.	127 1/2	127 1/2		127	
4th mortgage.....		110 1/2	110 1/2		
Col., Chi., & Ind. Cent	4 1/2	3 1/2	3 1/2	4	4
1st mortgage.....					
2d mortgage.....					
Del. & Hud. Canal.	109 1/2	109 1/2	108 3/4	108 3/4	108 3/4
Reg. 7s, 1891.....			114 1/2		
Reg. 7s, 1884.....					
7s, 1894.....					
Del., Lack. & Western	128 1/2	128 1/2	128 1/2	127 1/2	127
2d mortgage 7s.					
Consol. 1907.....					
Erie Railway.....	127				
1st mortgage.....					
2d mort. 5s, ext.					
3d mortgage.....				102 1/2	
4th mort. 5s, ext.					
5th mortgage.....	110	110			
7s, Consol. gold.	131		131		129 1/2
Great West. 1st mort			108 1/2		
2d mortgage.....		100			100 1/2
Hannibal & St. Jo.	45 1/2	46	46	45 1/2	43
Preferred.....	82	83	84	83 1/2	84
8s, Convertible.....					
Houston & Tex. Cen		79		78 1/2	
1st mortgage.....	108 1/2	108 1/2			108
2d mortgage.....			121 1/2		
Illinois Central....	146 1/2	146	145	145	144 1/2
Lake Shore & Mich So	114 1/2	114 1/2	113 1/2	111 1/2	111 1/2
Consol. 7s.....				126	
Consol. 7s, reg.....				125 1/2	104 1/2
2d Consolidated.....			121 1/2		
Lsh. & W. B. con. ass	104 1/2	103 1/2			104 1/2
Long Dock bonds..				118	
Louisville & Nash.	57 1/2	57 1/2	57 1/2	57 1/2	56 1/2
7s, Consol. reg.....	116 1/2				
Manhattan.....	49 1/2	49 1/2		49	49
1st pref.....	90			89	
Met. Elevated.....	84				
1st mortgage.....	93 1/2	98 1/2	98 1/2	98 1/2	98 1/2
Michigan Central.	99 1/2	99 1/2	99 1/2	99	98 1/2
7s, 1902.....	125	125			
Morris & Essex.....					
1st mortgage.....					

2d mortgage.....	115 1/2				
7s of 1871.....	122	123			123
7s, Convertible.....					
7s, Consolidated.....	122				
N. Y. Cen. & Hud. R.	128 1/2	128	127 1/2	127	126 1/2
6s, S. F. 1883.....	101 1/2				
6s, S. F. 1887.....	107 1/2		107 1/2		
1st mortgage.....	130 1/2				130 1/2
1st mortgage, reg.					
N. Y. Elevated.....					
1st mortgage.....	115	115		115	
N. Y. & Harlem.....					
Preferred.....					
1st mortgage.....				131	
1st mortgage, reg					
N. Y. Lake Erie & W	40 1/2	40 1/2	40 1/2	39 1/2	39 1/2
Preferred.....	82 1/2		82 1/2	81 1/2	
2d Consolidated.....	97 1/2	97 1/2	97	97	99 1/2
New 2d 5s fund.....	96				96 1/2
N. Y., N. Hav' n & Hart				170	170
North Mo. 1st mort	119 1/2			119 1/2	
Northern Pacific....	50 1/2	50 1/2	50 1/2	50 1/2	49 1/2
Preferred.....	87 1/2	86 1/2	86 1/2	86 1/2	84 1/2
Ohio & Mississippi.	33 1/2	33 1/2			33
Preferred.....					
2d mortgage.....					
Consolidated 7s.					
Consol. S. Fund.....					
Pacific Mail S. S. Co	42 1/2	43 1/2	42 1/2	42	41 1/2
Pacific R. R. of Mo.					
1st mortgage.....					
2d mortgage.....		112	112		
Panama.....					
Phila. & Reading..	58	57 1/2	57 1/2	56 1/2	55 1/2
Pitts. Ft. W. & Chi. gtd				137	136 1/2
1st mortgage.....				136	135 1/2
2d mortgage.....					132
3d mortgage.....					
Pullman Palace Car		125 1/2	125 1/2	126	126
Quicksil'r Min'g Co					
Preferred.....	39				
St. Louis & San Fran			33 1/2		
Preferred.....	54 1/2	54 1/2			53
1st Preferred.....	99 1/2	100		96 1/2	96 1/2
St. L., Alt'n & T. H.	52	54	55	54	54 1/2
Preferred.....	93 1/2	93 1/2	95	94 1/2	94 1/2
1st mortgage.....			114		
2d mort. pref.....					
Income bonds.....					103
St. L., Iron Mt. & S.					
1st mortgage.....					
2d mortgage.....					108
Toledo and Wabash.					
1st mortgage.....					
2d mortgage.....	101 1/2		100		100
7s, Consolidated.....				97 1/2	
St. Louis Division					104 1/2
Union Pacific.....	104 1/2	103 1/2	103	102 1/2	102 1/2
1st mortgage.....		114		114	114
Land Grant 7s.....					
Sinking Fund 8s.			119 1/2	119 1/2	119 1/2
United States Ex.....					
Wabash, St. L. & Pac	36	35 1/2	35 1/2	35 1/2	33
Preferred.....	56 1/2	56 1/2	56 1/2	56 1/2	54 1/2
New mort. 7s.....		95			
Wells-Fargo Ex.....	125	125 1/2			
Western Pacific b'ds					111 1/2
Western Union Tel.	84 1/2	84 1/2	84 1/2	83 1/2	83 1/2
7s., S. F. conv., 1900		117			

## FEDERAL STOCKS:—

U. S. 4s, 1907, reg...	119 1/2	119 1/2	119 1/2	119 1/2	119 1/2
U. S. 4s, 1907, coup.	119 1/2	119 1/2			119 1/2
U. S. 4 1/2s, 1891, reg.			113 1/2	113 1/2	113 1/2
U. S. 4 1/2s, 1891, coup				113 1/2	113 1/2
U. S. 4s, conf'd at 3 1/2					
U. S. 3s, reg.....	103 1/2		103 1/2		104 1/2
Dt. of Col. 3-65s, reg					
Dt. of Col. 3-65s, coup					

## Boston Stock Exchange.

Closing Prices for the Week Ending Jan. 23.

W. 17. Th. 18. F. 19. Sat. 20. M. 22. Tu. 23.

Atch., Top. & San. Fe.	85 1/2	84 1/2	84 1/2	84 1/2	84 1/2
1st mortgage.....	121				121 1/2
Land Grant 7s.....			113 1/2		113
Boston & Albany....	174 1/2	174 1/2	174	173 1/2	173 1/2
Boston and Lowell.	102				
Boston & Maine.....	150 1/2	151	151 1/2	151 1/2	152
Boston & Providence	161 1/2				
Bos'n, Hart. & Erie 7s					
Burl. & Mo. R. L. G. 7s			115 1/2		
Burl. & Mo. R. in Neb					
6s, exempt.....					82
4s.....					
Chi., Burl. & Quincy	125	125 1/2	125 1/2	125	123 1/2
Cin., Sand & Clev (\$50)					
Concord (\$50).....	102		100 1/2		
Connecticut River.					163
Eastern.....	41	40 1/2	41	41 1/2	41
New 6s, Bond.....	109 1/2	109 1/2	110	110 1/2	110

Fitchburg.....	121	121	121 1/2	121 1/2	
N. Y. & New England	51 1/2	51	51	50 1/2	48 1/2
7s.....	116				115 1/2
Northern N. H.....	110				
Norwich & Worcester					
Ogden & Lake Cham					
Old Colony.....	135	135	135	136	
Ph., Wil. & Balt. (\$50).					
Portl'd, Saco & Ports				112	112
Pueblo & Ark Val 7s		114	114		
Pullman Palace Car				125 1/2	126
Union Pacific.....	104 1/2	103 1/2	103 1/2	102 1/2	102
6s, 1889.....	113 1/2				113 1/2
Land Grant 7s.....					113 1/2
Sinking Fund 8s.				116 1/2	
Vermont & Mass.....					
Worcester & Nashua					
Cambridge (Horse)...					
Metropolitan (Horse)	72		73		73
Middlesex (Horse)...					
Cal. & Hecla Min'g Co	245 1/2	245 1/2	246 1/2		
Quincy.....	59 1/2	61	61 1/2	61 1/2	62

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Jan. 23.

W. 17. Th. 18. F. 19. Sat. 20. M. 22. Tu. 23.

Allegh'y Val. 7 3-10s					
7s, Income.....		49½		49½	49½
Buff., Pitts & West.	19	19½	19	19½	18½
Camd'n & Am. 6s, '83					
6s, 1889.....					
Mort. 6s, 1889.....	112		112½		
Camden & Atlantic.					
Preferred.....					
1st mortgage.....					
2d mortgage.....					
Catawissa.....					
Preferred.....					
2d pref.....					
7s, new.....					
Del. & Bound Brook					
7s.....				127	127
Elmira & Williams p't					
Preferred.....					
Hunt. & B. Top Mt.		15½			
Preferred.....	30				
2d mortgage.....					
Lehigh Navigation.	40%	40½	40½	40½	39½
6s, 1884.....				102½	102½
Gold Loan.....				110½	
Railroad Loan.....				110½	
Conv. Gold Loan.....			109		
Consol. Mort. 7s.	116			116½	116
Lehigh Valley.....	64½	64½	64½	64½	65
1st mort. 6s, coup		120½			120
1st mort. 6s, reg..					
2d mort. 7s.....					
Consol mort. 6s..	120				
Consol.mtg.6s,reg		120			
Little Schuylkill.....				57½	
Minehill&Sch.Hav'n				61½	62
North Pennsylvania					
1st mortgage 6s..	103½				
2d mortgage 7s..					
Genl. mtg.7s,coup			125		
Genl. mtg. 7s, reg					
Northern Central.....		55	55	55½	55½
5s.....					55
Northern Pacific...	50%	50½	50%	50%	49½
Preferred.....	87½	86½	86½	86½	84½
Pennsylvania R. R.	60%	61½	61	61	60½
1st mortgage.....				60½	60½
Gen'l mort.....					
Gen'l mort reg.....					
Consol. mort. 6s.					125
Consol. mort. reg					116½
Pa. State 5s, new...				117	
do 4s, new.....					
do 3½s, 1912...					
Phila. & Reading...	29%	28%	28%	28½	27%
1st mortgage 6s..					
7s of 1893.....					
7s, new convert..	77				
Consol. mort. 7s.		125	125	125	
Consol. mort.reg.					
Gen'l mort. 6s..	93%	94	94½	94½	94½
Def.Income bonds		25			
Philadelphia & Erie	20	21		21	
1st mortgage 5s..			103%	103%	103%
2d mortgage 7s..	112½			103½	103½
Pittsb., Cin.&St.L.7s				121½	
Pitts.,Tit.&Buff.7s	95½			96	96
Schuylkill Navi't'n					
Preferred.....	113½				
6s, 1897.....				67½	
6s, 1907.....			90	188½	
United Co. of N. J..	188½			188½	188½
Hestonville, (Horse)					
Chestnut & Walnut.					

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Jan. 22.

Tu. 16. W. 17. Th. 18. F. 19. Sat. 20. M. 22.

Baltimore & Ohio...	104 1/2				
6s, 1885.....					
Central Ohio (\$50)...					
1st mortgage.....					
Marietta & Cincin'ti.					
1st mortgage, 7s...	130	131	131 1/2	131 1/2	131 1/2
2d mortgage, 7s...	99 1/2	100 1/2	100 1/2	101	101
3d mortgage, 8s...	54 1/2	54 1/2	55	53 1/2	55 1/2
Northern Cen. (\$50)...					
2d mort. 6s, 1885...	103				
3d mort. 6s, 1900...					
6s, 1900, gold.....					
6s, 1904, gold.....					
Pitts. & Connelsv. 7s.	119 1/2	119 1/2	119 1/2	119 1/2	119 1/2
Virginia 6s Consol..	55	54 1/2			
Consol. coupons...					
10-40 bonds.....	39 1/2				
Def'd Certificates...					
New 3s.....			48 1/2		47 1/2
Western Maryland...					
1st M., end. by Balt					
2d M., do.....					
3d M., do.....					
1st M., unendorsed	109 1/2		111		109 1/2
2d M., end. Wash Co					
2d M., preferred...				110	
City Passenger R. R.					

**London Stock Exchange.**

Closing Prices

Dec. 29. Jan. 5.

Baltimore and Ohio 5s, 1927.....	107	109	107	109
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	110	112	110	112
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs..	89	90	90	91
Do. 1st mort. 6s, 1895-'98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds. 118	118	120	118	120
Do. Con. M. sp. c., till '83 after 6p. c. 117	117	119	117	119
Illinois Central \$100 shares.....	147	148	148	149
Do. S. F. 5s, 1903.....	105	107	105	107
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 91	93	93	93	95
Do. capital stock \$100 shares.....	54	55	55 1/2	56 1/2
N. Y. Cen. & Hud. R. mort. bonds. 130	135	130	135	
Do. \$100 shares.....	132	133	131 1/2	132 1/2
Do. mort. bonds (stg.).....	122	124	119	121
N. Y. Lake Erie & West. \$100 shs. 40 1/2	40 1/2	41	41 1/2	
Do. 6 p. c. pref. \$100 shares.....	84	86	85	87
Do. 1st Con. Mort. bonds (Erie). 128	132	128	132	
Do. do. Funded Coupon bonds. 125	130	125	130	
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. do. Funded Coupon bonds. 97	99	97	99	
N. Y., Pa. & Ohio 1st mort. bonds. 50 1/2	51 1/2	49	50	
Do. Prior Lien bonds (sterling). 100	105	103	106	
Pennsylvania \$50 shares.....	61 1/2	62	61 1/2	62 1/2
General Mortgage.....	124	126	121	123
Phil. & Erie Gen. mort. 6s, 1920.....	117	119	114	116
Philadelphia & Reading \$50 shs..	27	27 1/2	28	28 1/2
General Consol Mortgage.....	115	117	115	117
Do. Improvement Mortgage.....	104	106	104	106
Do. Gen. Mtg. 7 1/4, ex-def'd coup. 97	99	94	96	
St. L. Bridge 1st mort. gold bond. 122	124	122	124	
Do. 1st pref. stock.....	92	96	92	96
S. P. of Cal., 1st mort 6s, 1905-6. 106 1/2	107 1/2	106 1/2	107 1/2	
Union Pacific 1st mtg. 6s, 1896-9. 115	117	116	118	
Wabash, St. L. & P. \$100 shares..	36	37	35 1/2	36 1/2
Do. \$100 pref shares.....	56	57	56	57
Do. gen. mort. bonds.....	81	83	81	83

**AMERICAN RAILROAD JOURNAL****Financial and Commercial Review.**

WEDNESDAY, JANUARY 24, 1883.

RATES for money on call on stock collaterals during the forenoon, and down to 2 o'clock were 4 per cent. During the last hour of business on the Stock Exchange the rates were 3 1/2 @ 4 per cent.

The posted rates for foreign exchange were: Sixty-day 4.82 1/2 @ 4.83; demand, 4.86 1/2 @ 4.87; the actual rates were as follows, viz: Sixty-day bills, 4.82 @ 4.82 1/2; demand, 4.85 3/4 @ 4.86; cables, 4.86 1/2 @ 4 1/2; commercial bills were 4.80 1/2 @ 4 1/2. Continental bills were as follows: Francs, 5.22 1/2 @ 5.21 1/2 and 5.18 1/2 @ 5.18 1/2; reichsmarks, 94 1/2 @ 95 and 95 1/2 @ 95. Guilders, 39 13-16 @ 39 1/2 and 40 @ 39 1/2.

The Governor of Pennsylvania, in his last annual message to the Legislature says of the State finances that, four years ago the State debt was \$21,875,620.86; at this date it is \$20,225,000.28, the reduction of the debt in four

years being \$1,650,537.56. From this total of the State debt is to be deducted assets in the Sinking Fund amounting to \$7,992,983.82. The net State indebtedness December 1, 1882, is \$12,232,000.46. There is at present under the administration of State Treasurer S. M. Bailey, in the Sinking Fund, \$2,007,073.90 cash. As none of the State loans are at present reimbursable, the Treasurer has no lawful authority to apply this fund to the reduction of the debt, except by going into the market and buying the bonds of the State at a premium, handsome, indeed, and creditable to the State, but embarrassing to financial officers charged with accountability.

The report of the Philadelphia, Wilmington and Baltimore Railroad Company shows that that the earnings of the road and its connections during the year ending October 31, 1882, amounted to \$5,428,091.91, and the total expenses to \$3,676,494.30, leaving \$1,751,597.61 as the net earnings. These earnings result from the operations of the main line, including the New Castle Branch, the Philadelphia and Baltimore Central, and including what was the West Chester and Philadelphia Railroad, the Delaware Railroad, Queen Anne's and Kent Railroad, and Delaware and Chesapeake Railroad. The first three roads named earned \$1,781,286.41, and the expenditures upon the last two named exceeded their aggregate receipts by \$29,788.80. The report also states that after closing the revenue fund allowing for probable depreciation of the companies' assets, and for extraordinary expenditures not properly chargeable to operating expenses, the final result is a surplus to credit of profit and loss account, October 31st, 1882, of \$1,465,585.49.

The revenues of the city of Philadelphia from all sources during the year 1882 were \$13,425,404.97, and the total expenditures, \$13,255,688.53, leaving a balance in the treasury at the end of the year of \$169,720.44. This, added to the cash balance, \$2,250,693.44, of January 1, 1882, and the sinking fund cash, \$705,271.39, of 1st of January, 1883, makes a general cash balance at the latter date of \$3,125,685.27. Deducted from this are \$2,753,260.05 on account of outstanding indebtedness not presented for payment, still leaving a surplus cash balance for 1882 of \$372,425.22. In addition to this is the unexpended balance of the surplus of the two previous years, \$28,559.75. The funded debt of the city Jan. 1, 1883, was \$67,468,316.24, and the floating debt \$459,576.17. The total floating and funded debt has been reduced during the year from \$68,629,403.72 to \$67,922,892.41, a decrease of \$706,511.31. The decrease during 1881 and 1882 has been \$2,109,538.06, and the total of the sinking fund and other assets in the treasury, \$28,705,016.80. The unexpended balances of loans placed to the credit of the Sinking Fund Commissioners, subject to drafts or payments on account of loans by the departments, was \$98,597.84, and the amount of loan warrants countersigned, \$65,222.05.

The report of the business of the Delaware Railroad for the past year shows that 40,976 tons of peaches and 7,959 tons of berries were carried, making a gain in freight receipts of \$139,833. There were also gains of \$12,000 in

passenger, and 14,497 in mail and miscellaneous receipts. The surplus of earnings over expenditures was \$48,319.80.

The value of the exports of breadstuffs from the United States in December, 1882, was \$17,086,041, and in December, 1881, \$13,806,400. In 12 months ended December 31, 1882, \$182,682,734, and in the previous 12 months \$224,124,832.

The value of the exports of domestic provisions tallow and dairy products from the United States in December, 1882, was \$12,071,422, and in December, 1881, \$12,987,325. In 12 months ended December 31st, 1882, \$96,934,423, and in the previous 12 months \$133,332,417. The value of the exports of dairy products in 8 months ended 31st December, 1882, was \$10,439,701, and in previous 12 months \$15,513,800.

During the year, 63,578 East-bound and 64,030 West-bound freight cars were hauled through the Hoosac Tunnel, making a total of 127,608. Of these 61,995 of the East-bound and 36,653 of the West-bound cars were loaded. A total of 12,900 trains has passed through the Tunnel during the year, of which 4,000 were passenger and 5,107 freight, making an average of 41 trains a day. A total of 117,496 East-bound and of 110,654 West-bound passengers were carried over the road during the year, and 1,043,650 tons of freight were moved.

Mr. Eugene Kelly, chairman of the committee of Tennessee bondholders in New York which recently addressed a protest to Gov. Hawkins against the overthrow of the compromise of last May, has sent a dispatch to Gov. Bate renewing the protest, in which he says: "We protest against the assumption that the compromise of last May, pursuant to which about one-half the State debt had been funded for three-fifths of its amount and at a reduced rate of interest for a period of six years, can be overthrown and the creditors of Tennessee forced, by act of its Legislature, to accept one-half of their dues and one-fourth of their interest. The compromise of last May was the second agreed upon, besides several fundings of interest and bonds in default in former years. The bill of settlement now before the Legislature is no compromise, but an attempt to coerce the State's creditors, and, as such, is repugnant to every sentiment of justice, morality and fair dealing. It will not effect a settlement."

The New York Central and Hudson River Railroad Co. has \$7,490,000 bonds maturing May 1 next, of which over \$6,000,000 are represented by debt certificates. It is now proposed to issue a 4 1/2 per cent debenture bond to pay off the above obligations.

Illinois has a surplus in her treasury of \$3,000,000—the product of the receipts from the percentage of earnings paid to the State by the Illinois Central and other railroads. The debt of the State is only \$26,300.

The State of Missouri has an assessed valuation of real and personal estate footing up a total of \$649,269,242, and an outstanding debt of \$10,948,000.

At Mobile, Ala., on the 17th inst., Judge Bruce of the United States Circuit Court, rendered a decree appointing John Swann receiver



to wind up unfinished matters of the Alabama and Chattanooga Railroad and to protect the purchasers of the said road in the enjoyment of the property sold under order of the court.

The total coinage of the United States Mints, during the year 1882, comprised 88,805,831 pieces, valued at \$94,820,120. The total gold coinage amounted in value to \$65,887,685; the total silver coinage to \$27,972,635, including 27,574,100 standard dollars; the total minor coinage—one, three and five cent pieces—to \$960,400.

The Pennsylvania and New York Canal and Railroad Company, which is the northern outlet of the Lehigh Valley Railroad, reports the gross receipts of the past year at \$2,303,544.07, the expenses \$1,258,382.71, and net earnings \$1,045,161.36. Its coal tonnage was 1,447,972 tons. It has a fleet of six vessels plying on the lakes between Buffalo and Chicago.

The annual report of the Union Passenger Railway Company of Philadelphia, shows \$1,302,133 receipts and \$896,727 expenditures, leaving \$405,406 net earnings. Of this \$169,362 was paid for interest and rentals, and \$225,000 for dividends, leaving \$11,043 surplus to be carried forward. The Union road is the most extensive of the Philadelphia City passenger lines, and carried last year the large number of 21,864,811 passengers.

The message of the Governor of Wisconsin, dwells upon the excellent condition of the finances, and shows the balance of the war debts due to the United States to be only \$50,000. As an offset the State claims \$90,000 from the National Government for equipment and payment of troops during the war. Public lands, during the year, sold at from 50 cents to \$3 per acre, and about 1,000 acres are still on hand.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atchison, Colorado and Pacific 1st, 94; Buffalo, New York and Erie 1st, 1916, 130; Boston and New York Air Line pref., 80½; Belleville and Southern Illinois 1st, 122½; Chicago and Eastern Illinois, 1st, 100; Chicago, St. Paul Minn. and Omaha 52½; do. pref., 110½; do. consol., 108½; Cedar Falls and Minn. 14; Central Iowa, 25; Chesapeake and Ohio 68, 1911, 100; do. cur. 68, 54; do. 1st, Series A. 108½; do. Pur. money Fund., 113½; Columbus, Chicago and Indiana Central reorganization certif., 62½; do. Trust Co. certif. ass. sup., 116; do. inc., 49; Central Iowa 1st, 108½; Chicago, Burlington and Quincy, Denver div. 48, 85½; Chicago, Milwaukee and St. Paul, La C. and Dav. div. 1st, 94½; do. Min. Pt. div. 1st, 91½; do. S. W. div. 1st, 108; do. S. Min. div. 1st, 106½; do. Chicago and Pacific W. div. 1st, 92; Chicago and Northwestern S. F. 58, 100½; do. Int. bonds, 103; Danbury and Norwalk, 70½; Denver and Rio Grande, 46½; do. 1st, 108½; do. consol., 91½; Denver, South Park and Pacific 1st, 99; East Tenn., Virginia and Georgia, 9½; do. pref., 17½; do. 58, 71½; Evansville and Terre Haute, 1st, 97; Elizabethtown, Lexington and Big Sandy 68, 95; Fort Worth and Denver, 33; do. 1st, 72; Green Bay, Winona and St. Paul, 6½; Illinois Central Leased Line, 81; Indiana, Bloomington and Western, 33; do. inc., 45; Indianapolis, Decatur and Springfield 1st, 101½; International and Gt. Northern coupon 68, 85; Kansas Pacific 1st consol., 100½; Louisville and Nashville genl. mort. 68, 92½; Long Island, 63; do. consol. 58, 97½; do. 1st, 115; Lake Erie and Western, 31; do. 1st, 101; Louisville, New Albany and Chicago, 66; do. 1st, 102½; Metropolitan Elevated 2d, 88; Manhattan Beach, 18½; Michigan Southern S. F., 106½; Missouri, Kansas and Texas, 32½; do. gen. mort. 68, 83½; do. 78, consol. 109; do. 2d, 58½; Missouri Pacific, 103½; do. 1st consol.

102; do. 3d, 109½; Memphis and Charleston, 47; Minneapolis and St. Louis, 29½; do. pref., 67; do. South western exten. 1st, 110½; do. Pacific ext. 1st, 101½; Mobile and Ohio, 19½; do. 1st debent., 86; Milwaukee, Lake Shore and Western pref., 48½; do. 1st, 93; New York, Chicago and St. Louis, 14½; do. pref., 32½; do. 1st, 97½; Nashville, Chattanooga and St. Louis, 63; New York Ontario and Western, 26½; Norfolk and Western pref., 48½; do. genl. mort., 101½; Northern Pacific, 1st, 103; New Orleans Pacific 1st, 89½; Ohio Central, 13½; do. 1st, 93; Ohio Southern, 13½; do. 1st, 82½; Oregon Railway and Nav., 138; do. 1st, 106½; Oregon Trans Continental, 86½; Oregon Short Line 68, 100; Peoria, Decatur and Evanville, 27; Rochester and Pittsburgh, 20½; do. 1st, 106; Richmond and Alleghany, 14; do. 1st, 79; Richmond and Danville, 56½; do. 68, 94½; do. debent., 104½; Richmond, Danville and West Point, 26½; Rome, Watertown and Ogdensburg, ext. 58, 74½; do. inc., 41½; Southern Pacific of Cal. 1st, 103½; St. Louis, Alton and Terre Haute dividend bonds 60; St. Paul and Duinith, 39½; do. pref., 95½; St. Paul, Minn. and Man., 144; do. 2d, 108½; do. Dakota ext. 1st, 108; South Carolina, 25½; St. Louis and Iron Mt. 58, 78; do. Arkansas Branch 1st, 108; do. Cairo and Fulton 1st, 110; do. Cairo, Ark. and Texas 1st, 107½; St. Louis, Kansas and Northern, R. E. 78, 108½; do. Omaha div. 1st, 108½; St. Louis and San Francisco 2d, Class C, 93½; St. Paul and Sioux City 1st, 112½; Texas and Pacific, 40½; do. inc. L. G., 60½; do. consol., 95; Rio Grande div. 1st, 86½; Toledo, Delphos and Burlington, 10; Union Pacific Col. Trust 1st, 103½; Wabash, St. Louis and Pacific genl. mort. 68, 80; do. Havana div. 1st, 87; do. Chicago div. 1st, 82; do. Toledo, Peoria and Western 1st, 107; Arkansas 78, L. R., P. B. & N. O., 38; do. L. R. & Ft. S., 44; do. Central, R. R., 19; do. M., O., & R. R., 37; Alabama, Class A, 83; Louisiana consol., 73½; South Carolina 68, non-fund., 7; Tennessee 68, old, 43; do. new, 42; do. compromise, 45½; American Cable, 67; Am. Dist. Tel., 30; Mutual Union Tel., 22; do. 68, 75; Consolidation Coal, 27½; Colorado Coal and Iron, 23½; do. 68, 84; Maryland Coal, 17; Homestake Mining, 19.

**Boston.**—Atlantic and Pacific blocks, 102; do. inc., 20; do. 68, 93½; Atchison, Topeka and Santa Fe 1st, guar., 112½; do. 68, 101½; Atchison R. R. 4½, 82; Brookline 78, 130; Boston, Clinton, Fitchburg and N. Bedford, 58; Burlington and Missouri in Neb. 68, non-exempt, 103½; Chicago, Burlington and Quincy 78, 126½; do. 48, 86½; do. Denver ext. 48, 83; Connotton Valley 68, 34; California Southern 1st, 65; Central Iowa, 25½; Cambridge City 68, 115; Columbus, Springfield and Cincinnati, 10; Connecticut and Passumpsic Rivers R. R. pref., 91; Chicago and West Michigan, 61; Detroit, Lansing and Northern 78, 119; Flint and Pere Marquette, 27; do. pref., 99½; Highland Street R. R., 134; Iowa Falls and Sioux City, 88½; Kansas City, St. Joseph and Council Bluffs 78, 113½; Kansas City, Springfield and Memphis blocks, 101; Kansas City, Lawrence and Southern 58, 105½; Kansas City, Fort Scott and Gulf 78, 111; Little Rock and Ft. Smith, 36; do. 78, 105; Louisiana and Missouri River, 12; do. pref. 30; Leavenworth, Topeka and Southwestern 48, 72; Mexican Central, 20; do. inc., 21; do. 78, 73; do. Blocks No. 3, 97½; Marquette, Houghton and Ontonagon, 67½; Massachusetts Central, 3½; do. 68, 25½; New Hampshire State 68, 125; New Mexico and Southern Pacific 78, 113½; New York and New England 68, 105½; Oregon Short Line 68, 97½; Portsmouth, Gt. Falls and Conway 4½, 85; Rutland pref., 21; do. 68, 96½; Southern Kansas and Western 78, 109½; Sonora 78, 105½; Summit Branch, 8; Toledo, Delphos and Burlington, Branch inc., 11; do. S. E. div. 68, 51; Toledo, Cincinnati and St. Louis, 5; do. 68, 47; Wisconsin Central, 15½; Atlantic Mining, 16; Brunswick Antimony, 15; Copper Falls Mining, 2; Franklin, 13½; Huron, 2; Napa Consol. Quicksilver, 3½; Osceola, 31; Pewabic, 8; Silver Islet, 7; Sullivan, 1.

**Philadelphia.**—Alleghany Valley, 4; Am. S. S. Co. 68, 106; Chesapeake and Delaware Canal 68, 85½; City of Cincinnati 7-308, 130½; Central Transp., 34; Erie and Western Transp., 47½; Huntington and Broad Top Mt. consol. mort. 58, 89; Norfolk and Western pref., 48½; Philadelphia, Germantown and Norristown, 106; Perkiemen 68, 103; Philadelphia City 68, 1892, 122; do. 68, 1901, 133; do. 48, 1903, 113½; Philadelphia and Reading genl. mort. 78, 101; do. scrip, 105; Philadelphia, Wilmington and Baltimore 48, 92½; Pennsylvania Canal 68, 86½; Pennsylvania R. R. consol. mort. 68, 116½; do. scrip, 120; Pennsylvania Co. 4½, 94½; Sunbury and Lewistown 78, 110; St. Paul and Duluth, 39½;

Texas and Pacific 1st, 106; do. consol. mort. 68, 95; Union and Titusville 78, 93; West Jersey and Atlantic 68, 109½. The latest quotations are: City 68, 108@120; do. free of tax, 127@134; do. 48, new, 108@114; Pennsylvania State 58, new loan, 116@118; do. 48, old, 110@112; do. 48, new, 113@115; Philadelphia and Reading Railroad, 27½@27¾; do. consol. mort. 78, reg., 125@126; do. genl. mort. 68, coupon, 94½@94¾; do. 78, 1893, 120@121; do. 78, new conv., 75@78; United New Jersey R. R. and Canal, 188@189; Buffalo, Pittsburgh and Western, 18½@18¾; Pittsburgh, Titusville and Buffalo 78, 96@96½; Camden and Amboy mort. 68, 1889, 112@113; Pennsylvania R. R., 60½@60¾; do. general mort. 68, coupon, 124@125; do. reg., 124@125; do. consol. mort. 68, reg., 117@119; Little Schuylkill R. R., 57@58; Schuylkill Navigation pref., 13@14; do. 68, 1882, 89@91; Elmira and Williamsport pref., 58@60; do. 58, 99@100; Lehigh Coal and Navigation, 39½@39¾; do. 68, 1884, 103@104; do. R. R. loan, 115½@116½; do. G. Loan, 110@110½; do. consol. 78, reg., 116@116½; Northern Pacific, 49½@49¾; do. pref., 84½@85; North Pennsylvania, 65@66½; do. 68, 103@104; do. 78, 119@—; do. 78, General mort. reg., 124@—; Philadelphia and Erie, 21@22; do. 78, 110@112½; do. 58, 103½@104; Minehill, 61½@62¼; Catawissa, 23@24; do. pref., 56@—; do. new pref., 55@—; do. 78, 1900, 121@125; Lehigh Valley, 64½@63¾; do. 68, coupon, 120@120½; do. reg., 120@120½; do. 78, reg., 133@134; do. consol. mort. reg., 120@121; Fifth and Sixth streets (horse), 190@200; Second and Third, 115@117; Thirteenth and Fifteenth, 74@76; Spruce and Pine, 42½@44; Green and Coates, 80@88; Chestnut and Walnut, 80@92; Germantown, 60@71; Union, 110@—; West Philadelphia, 135@—; People's, 6@8½; Continental, 100@103.

**Baltimore.**—Atlanta and Charlotte, 62½; do. 1st, 104½; Baltimore City 68, 1886, 105½; do. 58, 1894, 114; do. 58, 1916, 122½; Canton 68, 109; Charlotte, Columbia and Augusta, 31; Columbia and Greenville 1st, 100; do. 2d, 73; Central Ohio pref., 53½; George's Creek Coal, 91; Louisville Water bonds, 110; Maryland Defense 68, 101½; Norfolk Water 88, 132; Province of Quebec 58, 100; Richmond and Alleghany, 15; Richmond and Danville bonds 1890, 105½; Virginia and Tennessee 68, 125; do. 68, 101; Virginia 100 coupons, 54; Virginia Midland 2d, 108; do. 5th, 95½; do. inc., 57; Wilmington, Columbia and Augusta, 109½. The latest quotations are: Atlanta and Charlotte 1st, 104@104½; Baltimore and Ohio, —@205; do. bonds 1885, 104½@105; Central Ohio, 68, 109½@110; Columbia and Greenville 1st, 1016, 100½@101; Marietta and Cincinnati 78, 1891, 131@132; do. 78, 1896, 101@101½; do. 88, 1890, 54½@55½; Northern Central, 55@55½; do. 68, 1885, 102½@103½; do. 58, Series A, —@99½; do. B, 95½@96; Ohio and Mississippi, Springfield div. 1st, 115½@115¾; Richmond and Danville gold 68, 93½@95; Virginia consol., 54@55; do. 10-408, 39½@—; do. 38, new, 48@48½; Western Maryland 1st, unindorsed, 109@109½; do. 2d pref., 109½@—.

#### OFFICE CENTRAL PACIFIC RAILROAD COMPANY, } SAN FRANCISCO, Jan. 5, 1883.

THREE DOLLARS PER SHARE WILL be paid on presentation of dividend warrant No. 15 on or after Feb. 1, at this office, or at the office of the company, No. 23 Broad-st., New York. Transfer books will be closed from 7 P. M., Jan. 15, to 10 A. M., Feb. 3. By order of the Board of Directors.

E. H. MILLER, Jr., Secretary.

#### ILLINOIS CENTRAL RAILROAD COMPANY.

FORTY-FIRST SEMI-ANNUAL CASH DIVIDEND. The Board of Directors have declared a dividend of THREE AND ONE-HALF per cent in cash, payable March 1, 1883, to the shareholders of the ILLINOIS CENTRAL RAILROAD COMPANY as registered at the close of business on Feb. 10. They have also declared an extra dividend of ONE-HALF OF ONE per cent in cash, payable at the same time to said shareholders, out of the earnings of the SOUTHERN DIVISION for the six months ending Dec. 31, 1882. The stock transfer-books will be closed from and after Feb. 10, until the morning of March 5.

L. V. F. RANDOLPH, Treasurer.  
NEW YORK, Jan. 18, 1883.

#### THE LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY Co., TREASURER'S OFFICE, GRAND CENTRAL DEPOT, NEW YORK, Dec. 22, 1882.

THE BOARD OF DIRECTORS OF THIS COMPANY have this day declared a quarterly dividend of TWO PER CENT upon its capital stock, payable on THURSDAY, the FIRST day of FEBRUARY next, at this office.

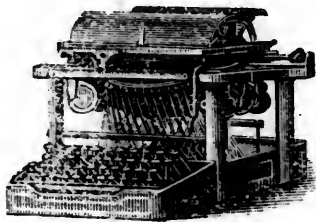
The transfer books will be closed at 3 o'clock p. m. on FRIDAY, the 20th inst., and will be reopened on the morning of Monday the 5th day of February next.

F. W. VANDERBILT, Acting Treasurer.

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**ORES.**  
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**NATIONAL EXPOSITION**  
 —OF—  
**RAILWAY APPLIANCES,**

TO BE HELD IN

**CHICAGO,** from **THURSDAY,** the 24th day of May, to **SATURDAY,** the 23d day of June, 1883, in the **INTER-STATE EXPOSITION** Buildings, the largest and best adapted for the purpose in the United States.

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An abundance of **STEAM POWER** for running Machinery, and tracks for Locomotives and Cars.

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 The Financial Stability of the Exposition secured by a **GUARANTEE FUND** of

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The proceeds, after payment of Expenses, to be devoted to **BENEVOLENT PURPOSES** connected with the **RAILWAY SERVICE.**

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## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '82	Little Miami.....50	4,637,300	q'arterly	Dec. '82	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Feio	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S.100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Apl. '82 3 1/2
Atlanta and W. Point100	1,232,200	semi-an	Jan. '82	Little Schuylkill*...50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82	Long Island.....50	10,000,000	q'arterly	Feb. '83	Westchester & Phil.pref100	821,300	semi-an.	July '80
Augusta and Savan*100	1,022,900	semi-an	June '81 3 1/2	Louisville & Nashv.100	19,130,913	semi-an.	Feb. '82	West Jersey.....100	1,359,750	semi-an.	Sept. '82
Avon, Genesee & Mt M*100	225,000	semi-an	July '81	Lowell & Andover...100	500,000	semi-an.	Jan. '82 3 1/2	Wilmingt'n & Weld'n.100	1,456,200	semi-an.	July '82 3 1/2
Baltimore and Ohio...100	14,792,566	semi-an	Nov. '82	Lykens Valley.....100	600,000	q'arterly	Oct. '81 2 1/2	Wil., Col., & Aug. ....100	960,000	semi-an.	Jan. '83
" pref.100	5,000,000	semi-an	Jan. '83	Manchester & Law...100	1,000,000	semi-an.	Nov. '82	Winchester & Poto'C.*100	180,000	semi-an.	Jan. '83
Washington Br.....100	1,650,000	semi-an	Nov. '82	Manhattan.....100	13,000,000	.....	.....	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83
Berkshire*.....100	600,000	q'arterly	Apl. '82 1 1/2	" 1st pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany...100	20,000,000	q'arterly	Dec. '82	" 2d pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	HORSE-POWER R. R.			
Bos. & N. Y. Air Line pf.100	2,795,227	q'arterly	June '82	Marietta & Cincinnati 50	1,386,350	.....	.....	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos. Cl. F. & N. B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	" 1st pref.50	8,105,600	semi-an.	Sep. '66 38	Baltimore City.....25	1,000,000	semi-an.	Jan. '83
Bos. Conc. & Mont. pf.100	800,000	semi-an	Nov. '82	Marq. Hout. & Ont.100	2,306,600	.....	Feb. '83 4	Balt., Cat. & El. Mills.100	8,000	semi-an.	Jan. '83 1/2
Boston and Lowell...500	3,940,000	semi-an	Jan. '82 1/2	" pref.100	2,259,026	semi-an.	Feb. '83 4	Bleeker St. & Ful. F'y.100	900,000	semi-an.	July '82 1/2
Boston and Maine.....100	6,921,274	semi-an	Nov. '82	Massachusetts*.....100	400,000	semi-an.	Aug. '82	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82
Boston & Providence...100	4,000,000	semi-an	Nov. '82	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
Attleborough Br.....100	131,700	semi-an	Jan. '83 1/2	Michigan Central.....100	18,738,204	.....	Feb. '83	B'way & 7th Av. (N.Y.)100	2,100,000	q'arterly	Oct. '82
Bos. Revere B. & Lynn100	419,400	semi-an	Jan. '83	Middlesex Central...100	280,000	semi-an.	Aug. '82	B'klyn & Hunter's Pt.100	400,000	semi-an.	Oct. '82
Buffalo, N. Y. & Erie*100	950,000	semi-an	Dec. '82	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Buff. Pitts. & West. pf. 50	1,457,000	.....	Jan. '83	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2	Bushwick (Brooklyn)100	309,000	semi-an.	Oct. '82
Camden & Atlantic...50	377,400	q'arterly	Nov. '82	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
" pref. 50	880,650	q'arterly	Nov. '82	Mobile & Montgomery100	3,022,517	semi-an.	Feb. '80 2 1/2	Cen. Park N. & E. Riv.100	1,800,000	q'arterly	Oct. '82
Camden & Burl. Co.100	381,925	semi-an	July '82	Morris and Essex....50	15,000,000	semi-an.	Jan. '83 3 1/2	Christoph'r & Tenth St.100	650,000	semi-an.	Aug. '82 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83	Citizens' (Phil.).....50	192,500	semi-an.	Jan. '82 2 1/2
Cape May & Millville* 50	447,000	semi-an	June '81	Nashua and Lowell...100	800,000	semi-an.	Nov. '82	Citizens' (Phg.).....50	200,000	annual	.....'80 1 1/2
Catawissa*.....50	1,159,500	annual	Oct. '82 2 1/2	Nashua & Rochester.100	1,305,800	semi-an.	Oct. '82 1 1/2	Coney Island & Bklyn.100	500,000	semi-an.	Oct. '80 5 1/2
" pref. 20	2,200,000	semi-an	Nov. '82 3 1/2	Nashv. & Decatur....100	1,827,000	semi-an.	June '81 3	Continental (Phil.)..50	580,000	semi-an.	Jan. '83
" new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Nash. Chat. & St Louis 25	6,670,325	semi-an.	Jan. '82 1 1/2	D. Dock, E. B'way & Bat.100	1,200,000	q'arterly	Aug. '82
Cayuga and Susq.*...50	589,110	semi-an	July '81 4 1/2	Naugatuck.....100	2,000,000	semi-an.	July '82	Eighth Av. (N. Y.)...100	1,000,000	q'arterly	Oct. '82
Cedar Rapids & Mo. R.100	6,850,400	q'arterly	Feb. '83 1 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sep. '82	42d St. & G. St. Ferry100	747,000	q'arterly	May '82
" pref.100	760,600	semi-an	Feb. '83 1 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Oct. '81	Frankf. & Southw (Ph) 50	600,000	q'arterly	Oct. '82
Central of Georgia...100	7,500,000	semi-an	June '82	New London North'n*100	1,500,000	q'arterly	Oct. '82 1 1/2	Germantown, (Ph.)..50	1,540,902	q'arterly	Jan. '82 1/2
Central of New Jersey100	18,563,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R.100	89,428,330	q'arterly	Jan. '83	Girard College (Ph.)..50	500,000	semi-an.	July '71 3
Central Ohio*.....50	2,437,950	semi-an	J. 11. '83	N. Y. and Harlem....100	7,950,000	q'arterly	Jan. '83	Grand St. & Newton.100	170,091	semi-an.	July '81 2 1/2
" pref. 50	411,550	semi-an	J. 11. '83	" pref.100	1,500,000	q'arterly	Jan. '83	Green & Coates St. (Ph) 50	708,650	q'arterly	Jan. '83
Central Pacific.....100	59,275,500	semi-an	Feb. '83	" City Line.....	.....	annual	Apl. '82	Heston, Mantau & F'm 50	299,381	semi-an.	Jan. '75
Cheshire preferred...100	2,155,300	semi-an	J. 11. '83 1 1/2	N. Y., Lake Erie & West.100	77,087,600	.....	.....	Highland.....100	600,000	semi-an.	July '82
Chicago and Alton...100	11,181,741	semi-an	Sept. '82	" pref.100	7,987,600	annual	Jan. '83	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75
" pref.100	2,245,400	semi-an	Sept. '82	N. Y., N. H. & Hart...100	15,500,000	semi-an.	Jan. '83	Lynn and Boston.....100	200,000	semi-an.	Nov. '82
Chi., Burl. & Quincy.100	69,508,105	q'arterly	Dec. '82	N. Y., Prov. & Boston100	3,000,000	q'arterly	Nov. '82	Malden and Melrose.100	165,000	.....	.....
Chi., Iowa & Nebras*100	3,912,200	semi-an	Jan. '83	Niag. Bridge & Canad*100	1,000,000	semi-an.	July '81	Metropolitan (Bost.)..50	1,500,000	semi-an.	Jan. '83
Chi., Mil. & St. Paul.100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*....100	3,000,000	semi-an.	Sep. '81	Middlesex (Boston)...100	650,000	semi-an.	Nov. '82 3 1/2
" pref.100	14,401,483	semi-an	Oct. '82 3 1/2	" pref.100	1,000,000	semi-an.	Sep. '81	N. Y., Bay Ridge & Jam.100	150,000	.....	Oct. '78 7
Chi. & N. Western...100	14,988,257	semi-an	Dec. '82 3 1/2	N. Eastern (S.C.) pref100	86,000	semi-an.	May '81	Ninth Av. (N. Y.)...100	797,320	.....	.....
" pref.100	21,525,353	q'arterly	Dec. '82	Norfolk & Western pref100	15,000,000	q'arterly	Dec. '82 1 1/2	Orange & Newark.....100	282,555	.....	.....
Chi., R. I. & Pacific...100	47,060,000	q'arterly	Feb. '83 1 1/2	North Pennsylvania. 50	4,527,150	q'arterly	Nov. '82 1 1/2	People's (Phila.) pref. 25	115,250	.....	July '82
Chi. and West Mich.100	6,151,000	semi-an	Feb. '82 1/2	Northern Central....50	6,142,000	semi-an.	Jan. '83	Philadelphia City...50	475,000	semi-an.	July '82
Chi., St. P. & O. pref.100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern N. Hampsh.100	3,068,400	semi-an.	Dec. '83	Phila. and Darby....20	200,000	semi-an.	July '81 3 1/2
Cin., Ham. & Dayton...100	3,500,000	semi-an	Jan. '83	Northern Pacific pref100	42,312,589	.....	Jan. '83 11.1	Phila. & Grey's Ferry. 50	308,000	semi-an.	Jan. '82
C. Ind., St. L. & Chic.100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5	Phg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82	Oregon & Transcon'tl.100	40,000,000	q'arterly	Jan. '83 1 1/2	Ridge Avenue (Ph.)..50	420,000	semi-an.	Oct. '81 11
Clev., Col. Cin. & Ind.100	14,991,800	.....	Feb. '82	Old Colony.....100	7,333,800	semi-an.	Feb. '83 3 1/2	Second Avenue (N.Y.)100	1,199,500	semi-an.	July '82
Clev. and Pittsburg* 50	11,244,336	q'arterly	Dec. '82 1 1/2	Oregon R'way & Nav.100	6,000,000	q'arterly	Feb. '83 2 1/2	Second & Third St. (Ph) 50	771,076	q'arterly	Jan. '83
Columbus & Xenia*...50	1,786,200	q'arterly	Dec. '82	Oswego & Syracuse...100	1,320,400	semi-an.	Aug. '81 4 1/2	17th & 19th sts (Ph.)..50	250,000	semi-an.	July '81
Col., Hock. Val. & Tol.100	10,316,500	.....	Jan. '83 2 1/2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82
Concord.....100	1,500,000	semi-an	Nov. '82	Paterson & Hudson*100	630,000	semi-an.	July '82	Somerville (Boston)...100	113,000	semi-an.	Nov. '82
Concord and Ports*...100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Ramapo...50	248,000	semi-an.	July '82	South Boston.....50	600,000	semi-an.	Jan. '83
Conn. & Passump. Riv.100	2,444,400	semi-an	Aug. '82	Pember. & Hight's n* 50	342,150	semi-an.	Jan. '82	Third Avenue, N. Y.100	2,000,000	q'arterly	Aug. '82
Connecticut River...100	2,100,000	semi-an	Jan. '83	Pennsylvania.....50	83,786,570	semi-an.	Nov. '82 4 1/2	13th and 15th sts, Ph 50	334,529	q'arterly	Jan. '83
Cumberland Valley...50	1,292,950	q'arterly	Jan. '82 1/2	Pennsylvania Co....100	20,000,000	annual	Dec. '82	23d street, N. Y.....100	600,000	semi-an.	Aug. '82
" 1st pref. 50	241,900	semi-an	Oct. '82	Peoria & Bureau Val*100	1,200,000	semi-an.	Aug. '82	Union, Boston.....100	374,300	semi-an.	Jan. '82
" 2d pref. 50	243,000	semi-an	Oct. '82	Philadelphia & Erie* 50	7,013,700	semi-an.	.....	Union, Phila.....50	1,005,000	semi-an.	Jan. '82
Danbury & Norwalk. 50	600,000	.....	Oct. '82 1 1/2	" pfd 50	2,400,000	semi-an.	Jan. '75	West Philadelphia...50	750,000	semi-an.	July '77 10
Dayton and Mich.*...50	2,402,573	semi-an	Oct. '82 1 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Dec. '82	CANALS.			
" pref. 50	1,211,250	q'arterly	Jan. '82	Phil. and Reading...50	32,726,375	q'arterly	Jan. '76 2 1/2	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
Delaware*.....25	1,468,940	semi-an	Jan. '83	" pref. 50	1,551,800	q'arterly	July '76 3 1/2	Delaware Division...50	1,633,350	semi-an.	Aug. '82 1 1/2
Del. & Bound Brook*100	1,052,000	q'arterly	Nov. '82 1 1/2	Phila. and Trenton...100	1,259,100	q'arterly	Jan. '83 2 1/2	Delaware and Hudson100	20,000,000	q'arterly	Dec. '82 1 1/2
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83	Delaware & Raritan*100	5,847,400	q'arterly	Jan. '82 1/2
Denver & Rio Grande.100	29,160,000	q'arterly	Jan. '82 1 1/2	Pittsb. Ft. W. & Chi.*100	19,714,285	q'arterly	Jan. '83 1 1/2	Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82
Detroit, Lans. & Nor.100	1,825,600	semi-an	Aug. '80 2 1/2	" Special Imp.100	6,770,900	q'arterly	Jan. '83 1 1/2	Monongahela Nav...50	1,004,500	semi-an.	Jan. '83 3 1/2
" pref.100	2,503,380	semi-an	Aug. '82 3 1/2	Pittsfield & N. Adams.100	450,000	semi-an.	Jan. '83 2 1/2	Morris, consolidated.100	1,025,000	semi-an.	Aug. '82
Dubuque & Sioux C'y*100	1,709,550	semi-an	Oct. '82	Portl., Saco & Portsm.100	1,500,000	semi-an.	Jan. '83	" preferred.....100	1,175,000	semi-an.	Aug. '82
East Pennsylvania*...50	1,000,000	semi-an	Jan. '83	Providence & Worces.100	2,000,000	semi-an.	Jan. '83	Pennsylvania.....50	4,501,200	.....	.....
East Mahanoy*.....50	392,950	semi-an	Jan. '83	Rensselaer & Saratog.*100	7,000,000	semi-an.	Jan. '83	Schuyl. Nav., com.* 50	859,100	annual	Oct. '82 50c.
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Danv...100	5,000,000	q'arterly	Aug. '82	" pref. 50	3,200,000	annual	Oct. '82 1 1/2
Eel River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Richmond & Petersbr100	1,009,300	semi-an.	Aug. '82	MISCELLANEOUS.			
Elmira & Williamspt* 50	500,000	semi-an	Nov. '82 1 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '83	Adams Express.....100	12,000,000	q'arterly	Dec. '82 2 1/2
" pref. 50	500,000	semi-an	July '82 3 1/2	Rome Water & Ogden100	5,293,900	.....	Jan. '83	American Express...50	18,000,000	semi-an.	Jan. '83
Erie and Pittsburg*...50	1,998,400	q'arterly	Dec. '82 1 1/2	Rutland preferred...100	4,000,000	semi-an.	Sep. '82	Amoskeag Manuf. Co.100	3,000,000	semi-an.	June '81
Evansville & Terre H.100	100,000	semi-an	Jan. '83 6b	St. L., Alt. & T. Haute.100	2,300,000	.....	.....	Calumet & Hecla Min'g 25	100,000	q'arterly	Feb. '83 5
Fitchburg.....100	4,500,000	semi-an	Jan. '83	" pref.100	2,468,406	.....	Dec. '82				

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—BETWEEN—

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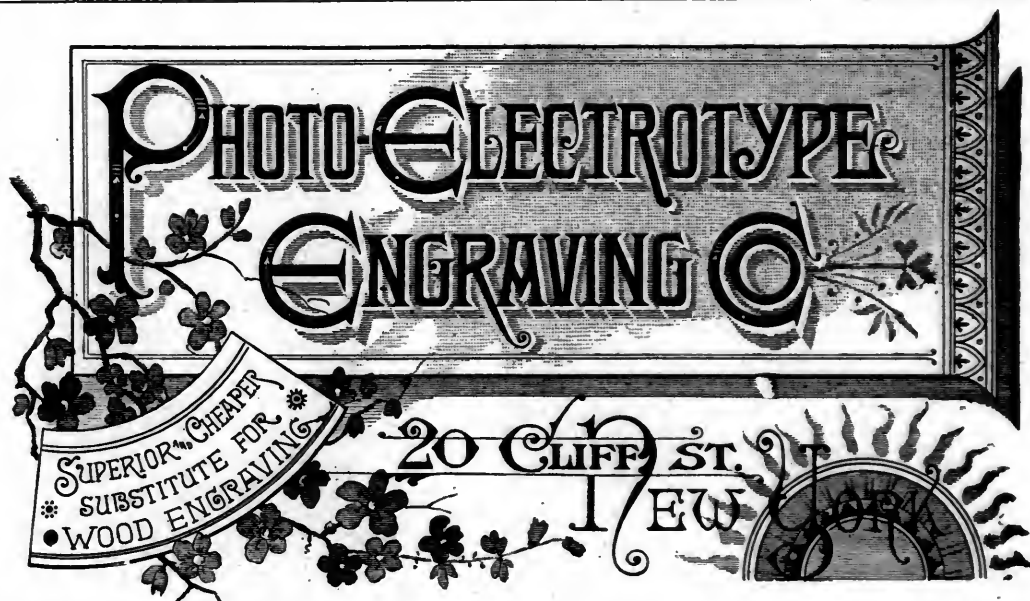
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Letters respecting the financial affairs of the Company should be addressed—

**H. F. Worrall, Treasurer, 8 Exchange Place, Boston, Mass.**



## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,686	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	.....	.....
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,930	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,903,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,020,000	2,277,000	2,474,000	2,409,000	2,242,000	.....	.....
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	108,681	222,762	221,559	199,443	214,352	238,236	259,110	247,393	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,306	230,022	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	635,307	7,553,988
1882.....	570,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	.....	.....
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,241,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	.....	.....
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,634,821	1,307,948	1,418,149	1,679,455	1,418,371	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,560,597	1,855,000	17,025,468
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	363,202	385,586	373,370	379,029	392,921	391,950	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,095	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	221,320	211,014	192,623	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	239,379	.....	219,732	.....	.....
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	643,417	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	221,893	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	138,284	154,717	168,798	148,913	154,917	155,030	184,347	258,628	239,196	238,442	249,252	.....	.....
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	728,173	689,387	695,371	674,603	674,749	752,251	752,251	813,600	828,238	865,325	752,144	.....	.....
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	203,677	200,064	199,846	190,125	272,114	247,332	225,678	200,450	156,697	.....
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	.....	.....
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,107,985	1,216,215	1,192,390	.....	.....
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,812	2,403,224
1882.....	150,676	158,596	148,166	141,957	134,378	135,184	136,398	140,443	160,031	265,201	295,110	307,643	.....
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,256
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	.....	.....
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,306,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	237,729	2,809,255
1882.....	213,840	217,261	265,222	263,544	283,244	290,060	300,920	353,726	383,490	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,206,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,076	1,606,874	1,766,417	1,809,010	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	.....	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	320,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	455,588	477,887	440,811	488,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	503,083	667,488	592,435	550,223	526,685	.....	.....
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	434,331	4,044,576
1882.....	239,800	269,000	384,000	438,000	568,332	631,342	697,240	727,377	789,700	834,460	761,324	.....	.....
<b>PHILADELPHIA AND ERIE:</b>													
1880.....	224,307	245,372	327,678	334,947	311,470	331							

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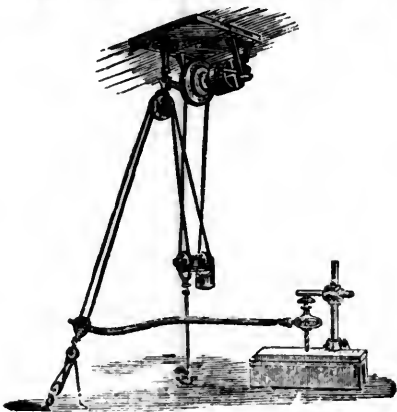
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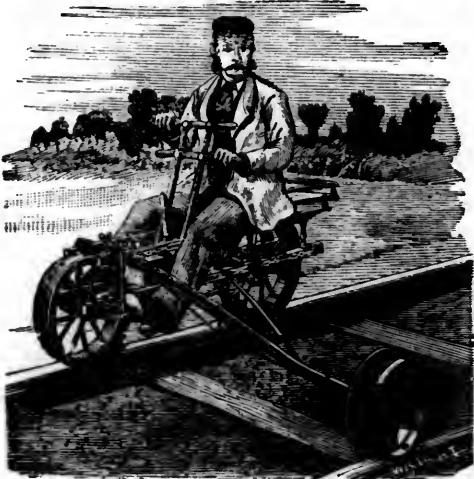
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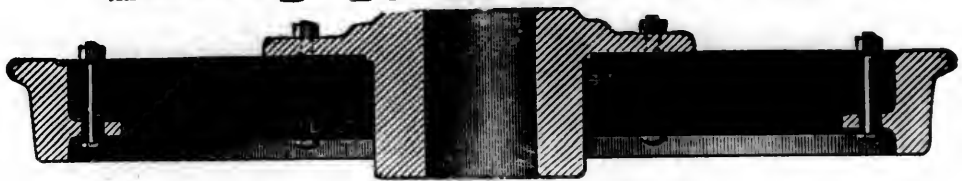
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(ALL SIZES).

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**MCLEOD AIR RAILROAD SIGNAL CO.,**  
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New York Office with Col. Thos. R. Sharo, 115 Broadway.



### Another Attempt to Solve the Problem of Cheap Car Fares.

ANOTHER effort is being made to cheapen the cost of running street cars, and thus proportionately reduce the rates of fare. This time it is a motor invented by B. C. Pole, an engineer in the service of the U. S. Government. As described by the *Philadelphia Record*, the motive power is delivered from an Otto or similar class of gas engine, into which coal gas is fed from a tank or reservoir. After its injection into the engine it is exploded, and this explosion, operating upon a series of pumps or valves, sets in motion the movements of the motor. In the first place, there are two fluid cylinders so arranged as to bring the pressure of the fluid upon a foot, which goes down upon the cobble-stones between the tracks, making a step of three feet two inches in length; and every time this grip-like device, fitted with teeth and nicely adjusted for securing purchase or hold, makes a step the motor is propelled or pushed forward three feet and two inches, the steps to be decreased or increased by regulation from the engineer. The foot is padded with rubber, which gives its stroke upon the earth such elasticity that there is no jar or sudden start.

Immediately over the top of the foot as it rests on the earth are two air cylinders connecting with the feet by a swinging shaft. Upon these feet they bear a pressure of 500 pounds. The action of the air and fluid pressure is simultaneous in effect, and when the power of propulsion by the latter has been expended the former lifts the feet, and the counter action of the hydraulic cylinders takes them forward for the next backward or propelling movement.

The operation of the machinery is described to be as simple as the movement of an elevator. The whole is regulated by a sliding handle, which can be understood after five minutes instructions. In describing the new invention to a reporter the engineer stated that the principal upon which motion was to be obtained was exactly the same as the pressure of the hind feet of a horse against the cobble-stones in starting a car. In deriving pressure the motion is entirely independent of the motor wheels. The engine is steered by the two front wheels, and is provided with a feature of simple construction by which, should it run off the track, the engineer can easily work it back again. The inventor has discovered what he terms the differential car-starter, which is a new art of propulsion by leverage. It consists of a wheel within a wheel. The back axle of the car terminates in two small wheels, running upon the inside of the flanges of two larger wheels. The larger wheels are operated by small friction wheels, the contact between them being upon the upper and outer periphery of the larger wheels. When the motive power presses the rear small wheels against the large wheels the effect is to cause the latter to revolve, bringing into effect the law of leverage, and the action of gravitation on the rear axle of the car causes the whole to move forward. This leverage comes into action whenever there is any resistance, such as starting a car loaded with passengers, going up grade or running over a stone

or other obstruction. It is claimed that with such a starter a locomotive weighing 500 pounds less than the car will start it with ease. It is estimated that the use of the new car motor which is now being built will reduce the cost of running a street car per day from \$19 to \$12, including the conductor and driver. The weight of the motor is only 4,000 pounds, a weight easily carried by the street rails now in use.

### Parlor Cars for the Canadian Pacific Railway.

At the car shops of the HARLAN & HOLLINGSWORTH COMPANY two parlor cars have just been completed for the Canadian Pacific Railway that are beyond question the handsomest hardwood finish ever turned out in the United States. No expense has been spared to make them luxurious enough for the laziest, and attractive enough for the severest aesthete. As the cars are duplicates with the exception of the name, it is only necessary to describe one of them.

As to dimensions, the length in frame is sixty feet, by nine feet ten and one-half inches in width, by nine feet seven and one-quarter inches in height. The length including platforms is sixty-six feet four inches. The exterior of the body is paneled in solid mahogany, ornamented with gold, and picked in with black and delicate touches of vermilion, the whole being varnished. To the uninitiated, it may be well to state that the belt rail is the line of the car just below the windows. The names of the coaches, "Lachine" and "Carillon" are placed below the belt rail in the center of the car on what might naturally be called the vertical woodwork forming the side of the car, but what is technically called narrow matched and coved mahogany sheathing. The name is in black and gold to match the outside decoration. Above and below the name is a single gold band about three inches wide picked in with a graceful vinelike design in black. On the frieze board appears the name of the road "Canadian Pacific Railway." The design on all the corner posts and door posts is very handsome, the idea being a vase from which gracefully rise slender leaves, sunflowers, etc., a design that even Oscar Wilde would not have the heart to criticize adversely. The side of the car above the belt rail is paneled.

In the sides of the raised roof are pivoted ventilator sashes paned with colorless ornamental glass. Outside these ventilators are fine brass-work screens. The coaches are equipped with Miller platform and draw fixtures, double-acting hand brakes and Westinghouse automatic brakes. They are mounted on first-class four-wheel trucks, Canadian Pacific Railroad standard, the spread of wheels being eight feet, and are fitted with forty-inch English steel-tired wheels and French's quadruple elliptic and steel-coil springs.

Along the sides of the car are nine unusually large windows of heavy plate glass thirty-four inches high and forty-eight inches long. Each window is supplied with a spring roller curtain of the best English burgess and a handsome lambrequin of silk damassé, crimson figures on

a gold ground, and having a deep fringe, the upper part of netted silk chenille and the lower of wooden tassels, alternately covered with crimson and gold silk.

The car is divided transversely into five sections, the large and center one for the parlor, a smoking room at each end, between these sections others sub-divided at one end into a gentlemen's toilet, and wash room and linen locker, and at the other into a ladies' toilet and wash room, linen locker and room for the Baker heater. The heater pipes pass along the entire length of the car and are gold bronzed. Above the pipes runs a carpeted rest to protect both the pipes and the feet of the passengers. The entire interior is rich and pleasing yet restful to the eye. The parlor is lighted by ten of the large windows, and furnished with twenty revolving arm chairs of solid mahogany, upholstered with crimson plush. Each chair can by a simple arrangement quickly be taken apart for cleaning. In the parlor between the windows are elegant heavy beveled glass mirrors sixteen by forty-four inches and on the bulkheads four more twenty-four by forty-eight. The interior wood work is of solid mahogany, inlaid with marqueterie, mainly in neutral tints, the figures being exquisite designs of flowers, vines, insects, birds and conventional forms. Throughout the entire car the ceiling is of oak veneer, having painted decorations in Japanese and other graceful figures. The car is lighted with Adams & Westlake's double-light gilt chandeliers, there being three in the parlor and one in each smoking room. Of portable fixtures, there are mahogany tables which can be placed between any two chairs, and large, fine brass wire screens to be placed in the windows in warm weather to protect passengers from the dust and cinders, while not obstructing the view.

The smoking rooms, which are alike, have walls of solid San Domingo mahogany with rosewood trimmings. On each side is a handsome and very durable sofa, upholstered and tufted in dark green morocco. For ventilating the smoking rooms, there is a drop sash in the end door, a ventilator over the platform and a pivoted transom.

These cars are absolutely unique in the fact that they are finished in solid mahogany both inside and outside, and in this they are different from any other cars ever turned out in this country as well as different from the standard adopted by any road in the United States.

The cars will be taken to Montreal this afternoon to be immediately placed upon the line between Montreal and Winnipeg, Manitoba, and will reach their destination in time for the inspection of visitors to the Grand Ice Carnival which will be held shortly at Montreal.—*Williamington (Del.) Every Evening, Jan. 18.*

FIVE-CENT fares have proved a success on the Spruce and Pine Streets Railroad, Philadelphia. The annual report shows that the reduction of fares one year ago proved a wise movement, the income having increased largely, permitting an increased dividend, with a considerable balance in the treasury after providing a number of new cars and making other desirable improvements. Without waiting to be forced to it by legislation, other street-car companies in Philadelphia are discussing the propriety of coming down to five-cent fares.

### Railroads of Connecticut.

THE report of the Connecticut Railroad Commissioners shows that the gross earnings in 1882 were \$15,353,656, operating expenses \$10,338,802, net earnings \$5,024,217, which sum is 4 per cent less than the net earnings of 1881. Dividends, averaging 3.23 per cent on the capital stock, amounted to \$2,635,071. The operating expenses are considerably in excess of those for 1881. The average cost of maintenance of road was \$1,399 per mile, an increase of \$267, and the highest cost is reported by the consolidated road—\$2,833. The length of all the roads in the State, 962 miles; double-tracks, 121; sidings, 215. Stock issued and outstanding indebtedness is reported at \$83,710,289, an increase of \$12,204,243. The construction account is \$74,879,789, an increase of \$2,082,552; equipment account, \$8,420,176, an increase of \$638,681.

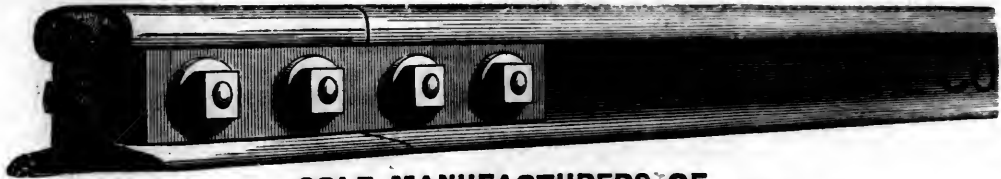
THE repairs on the New York and New England Railroad's transfer steamer Maryland are nearly completed, so that it is expected that very early in February trains will again run through from Boston to Philadelphia and Washington without change. The drawing-room car "General Putnam," which runs on this road in connection with the Norwich Line, is being refitted, and will be supplied with the Horton reclining chairs which will add greatly to its comfort. An elegant Tuscan red has been adopted as the standard color for all cars, and three cars which have just come out of the Norwood shops are painted in this color and ornamented with two narrow gilt stripes running the entire length under the windows present a very handsome appearance. These cars are to run between Boston and Denham.

THE new code of signals of the Boston, Concord, Montreal, White Mountains and Mount Washington Branch railroads went into effect on the 17th inst., governing movements of trains by telegraph, with twenty-six sections, and providing for strict control of all trains, both by night and day, on all parts of the line. Numerous checks are provided for signing telegrams, and various colored flags and lanterns at each station are to be universally used. B. H. Corning is to be train dispatcher of the Northern Division above Woodsville and George E. Randall for the Southern Division from Woodsville to Concord, with headquarters at Plymouth.

KLOMAN & BROS., of Pittsburgh, have furnished for the United States Spring Car Motor Company of Philadelphia two pieces of steel, which are claimed to be the largest ever rolled in the world. The first piece was 327 feet long, 6 inches wide and  $\frac{1}{4}$  of an inch thick, and the second piece 300 feet long, 6 inches wide and  $\frac{1}{4}$  of an inch thick.

BOWERS, DURE & COMPANY, of Wilmington, Del., shipped ten copper-bottom gondola cars to the Norfolk and Western Railroad and sixteen transfer trucks to the Shenandoah Valley Railroad on the 15th inst.

SUBSCRIBE for the Railroad Journal.



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which form non-metallic, permanently elastic compensating cushions, absorbing shocks and vibrations, and absolutely locking the nuts. These Washers have been adopted by a large number of railroads as the cheapest and best device in use. Flexible vulcanized-fibre dust guards and oil box packings, which are absolutely unaffected by oil and grease, are far more durable than leather and much cheaper.

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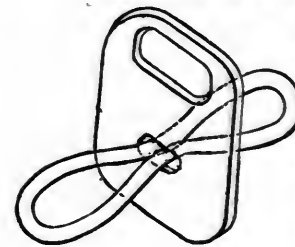


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### SWEETLAND SAFETY LINK GUIDE.

Patented August 29, 1882.



The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six pounds.

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MILL SUPPLIES.

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NEW YORK.



### The Events of a Lifetime.

REV. D. A. RANDALL, D. D., in the course of an address upon the "Lessons of a Lifetime," delivered by him in Columbus, Ohio, on the 14th instant—being the seventieth anniversary of his birthday—is reported to have said:—

It has been the privilege of him who addresses you to live in a period of the world's history which—for remarkable and stirring events, for useful discoveries and wonderful inventions, the rapid development of the world's resources, and the salutary and benign progress of the human race—has never been equaled by any period of the same duration in the annals of the world.

While your speaker was yet in his cradle the war of 1812 had just closed; trade was depressed; the country in debt; the recuperative resources of the Nation limited, and the inducements to vigorous enterprise far from encouraging. We had then, all told, a population of a little less than 8,000,000. Nearly all the country west of New York was an unexplored wilderness where the savage and the wild beast held undisputed dominion. New York itself had a population of less than one million. Between the settled portions of the country transportation was laborious, slow and difficult. All merchandise west of Albany was carried on wagons, and all property taken to the East, if any was worth the transportation, was taken by the same laborious way; while public travel was by the old lumbering stage coach, from two to six miles an hour, according to the season of the year and the condition of the roads. I well recollect when in Western New York the stumps of the newly cleared land were still standing in the streets of some of her now most populous cities.

It is within my recollection when the idea of a canal from Buffalo to Albany created heated discussions, and DeWitt Clinton, then Governor of New York, was denounced by many as a fanatical enthusiast for his earnest advocacy of the work. When completed in 1825 I was but a boy of twelve, and I well recollect the day when, with a great and enthusiastic celebration, the water was let into the great ditch, as some of the opponents of the scheme were accustomed to call it. In lack of any other mode of rapid communication, cannon were planted all along the line at such intervals as could easily be heard from one to the other, and at the auspicious moment the sound at Albany was caught up and boom, boom, boom it went along the line till the echo of the last signal died away over the waters of the great lake. It was the most rapid telegraphic communication that could then be devised. The opening of this canal proved an auspicious day for the whole country. It opened a channel of communication and transportation from the great lakes of the West to the very heart of the nation's commerce in the East, and the pulsations of a young and vigorous nation beat with a new life.

But as the boy outgrows his early suits, so the young and vigorous nation soon outgrew its facilities for internal trade and communication. As necessity is a spur to enterprise and invention, the powers of genius were called in-

to requisition to meet the exigencies of the case. It seems to be in the very nature of things, or rather perhaps we should say in the order of Providence, that when a want exists some one is found equal to the emergency. As Nature abhors a vacuum, Genius rushes in to fill a waiting void.

While I was yet in my cradle Fulton was still engaged in his experiments, and improving his methods of steamboat navigation. In 1808 a small boat commenced regular trips upon the Hudson River, but it was not until the days of my youth that steam navigation was made so successful and profitable as to be brought into any very extended use, and not till I was twenty-five years of age that regular steamboat trips commenced across the Atlantic. Thus it was by the genius of Fulton and the potent agency of steam our great network of inland rivers and lakes were made certain and profitable highways of commerce.

The use of steam opened a demand for ships of greater strength, and experiments with iron instead of wood commenced. To whom belongs the honor of inventing iron ships may be a question. Its final success may have been the combined result of the genius of several inventors. Charles Olcott, a graduate of New Haven University, and for many years a resident of Medina, in this State, where he died, claimed to be the inventor of the iron ship, and that others better skilled in the business craft of the world stole from him both the invention and the emoluments. Many years ago in a visit from Medina to this city he sent down by me to be hung up in the State Library, a drawing of his first iron ship, with iron masts, which he wished to place where the public could see it.

I know not how this was, but if what he claimed for himself was true, if he had had his just reward, another name would be added to the long list of notable men that has given Ohio so distinguished a name in the galaxy of States.

But still the demands of the vigorous young Republic were not satisfied. Some more expeditious mode of transportation must be found to meet the growing necessities.

Steam had been a success on the waters, why not on the land? The slow and tedious process, and the expensive experiments by which the running of locomotives upon roads laid with iron rails was brought to any practical degree of utility seems strange to us now. It was not till 1826 that the road from Schenectady to Albany, in the State of New York, was commenced, the first of the thousands of miles that now bind cities to cities, and States to States, and link with fetters of iron the Atlantic to the Pacific. The roads built, and the few cities of our water courses could no longer monopolize the increasing commerce of our growing country. The inland cities could now compete with them in commerce and manufactures, and they were thrilled with the vigor of excitement and enterprise.

With increased facilities for commerce and speed of locomotion came the demand for greater facilities in the transmission of information. "I am going to Cleveland to-day, but I must let my friends know I am coming. How

can I get ahead of railroad time?" Again the inventive genius of the age was equal to the demand.

In 1840 Prof. Morse, after a long series of experiments by himself and others, patented several of his most valuable improvements in the electric telegraph; but it was not until 1844 that his first line of wires was erected from Washington to Baltimore (35 miles), that the first message was transmitted. It was a hopeful and enthusiastic event when the delicate fingers of a young lady touched the sensitive keys of the little instrument in Washington, and quick as the lightning's flash the waiting friends in Baltimore read: "What hath God wrought?" Then it was found that distance was no obstacle to the transmission of intelligence—space and time were annihilated.

Then came the experiments for the extension of these lines under and across the great oceans. It was in August, 1858—less than twenty-five years ago—as I sat in my house on Rich street, a boy came in with a newspaper, and I opened and read, "The great Atlantic cable has been successfully laid, and a message has been transmitted to Queen Victoria at her court in London." I have not yet forgotten the sensation that thrilled me, as with an electric shock, and I could not but exclaim again in the language of the first message from Washington to Baltimore, "What hath God wrought?"

Now our telegraphic lines belt the world, and along the trembling pathway the subtle fluid that Franklin first brought on his kite-strings from the clouds and Morse harnessed in faith and trembling hope to his little slender machine, finds its magic way through forest and under oceans, and over deserts and continents, and republics and empires. Presidents and kings stand as if face to face, and the merchants of our great cities market their produce in London, Calcutta and, Hong Kong while it is yet lying upon our wharves at home.

And now while I look back over the past and stand astonished at these inventions and improvements which I have seen grow from infancy to gigantic proportions, a greater wonder than them all has grown into use under your own eyes, and in your own houses, in the telephone, by which at the call of your little bell, you talk with your friends in any part of the city, or in distant cities, as freely and easily as though they were in your own office or drawing-room. As I have contemplated these things I have sometimes felt as though the world about me was full of invisible conductors, and that even my private thoughts were transmitted by invisible conductors to the minds of others, or that unseen and mystic wires linked us to the very throne of Omniscience and found a record there.

A VERY large meeting of colored men from various portions of the State was held at Wilmington, N. C., on the 17th inst. for the purpose of promoting the first railroad enterprise ever started exclusively by men of that race. Several thousand dollars were subscribed. The projected road is to run from Wilmington into the eastern counties of North Carolina. There is a strong probability that the road will be built. The movement creates much interest.

# THE SALMON CAR HEATER



"36 per cent of coal saved and the car kept noticeably warmer!"

by using THE SALMON CAR HEATER.  
It Insures Safety from Fire in case of Accident,  
Economy in Fuel and RAPID CIRCULATION. It heats quickly, is SELF-REGULATING, and can be used for either STEAM OR HOT WATER.

The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low state of combustion without danger of chilling the fire.

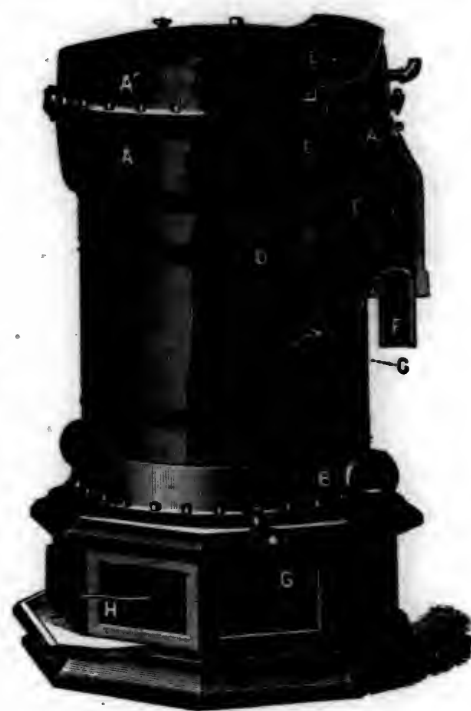
Once filled with coal the fire will last from 24 to 60 hours, according to weather, without replenishing, as proved by actual test.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

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## Commerce of New York.

THE foreign imports at New York for the month of December were:—

	1880.	1881.	1882.
Ent. for cons.....	\$14,726,093	\$19,303,335	\$18,800,319
Do. for warehousing	5,817,234	6,166,934	9,074,155
Free goods.....	10,540,073	13,984,380	12,976,076
Specie and bullion..	16,202,447	1,757,101	1,472,318

Total ent. at port....	\$47,285,847	\$41,121,453	\$42,322,868
Withdrawn from warehouse.....	6,835,847	6,599,836	5,969,979

This brings the total for the year 1882 up to \$499,928,774, against \$495,424,906 for the year 1881, and \$539,386,776 for the year 1880.

The following is the classification of imports at New York for the years:—

	1880.	1881.	1882.
Dry goods.....	\$119,844,120	\$111,537,020	\$132,262,730
General mdse.....	344,332,560	327,864,653	359,971,256
Specie.....	75,210,096	56,023,233	7,694,788

Total.....	\$539,386,776	\$495,424,906	\$499,928,774
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The duties received at New York for the twelve months ending with December were:

	1880.	1881.	1882.
In January..	\$11,960,677 78	\$10,572,559 15	\$13,387,515 96
In February..	12,254,602 24	11,217,766 87	13,585,053 25
In March....	14,469,557 65	13,122,964 03	13,999,138 76
In April.....	11,901,071 43	11,678,760 93	11,906,105 45
In May.....	9,752,873 54	11,055,935 39	11,981,893 08
In June.....	10,699,840 52	10,993,452 70	11,428,930 11
In July.....	13,360,394 37	12,079,573 95	13,730,752 87
In August....	14,492,361 87	15,205,469 58	16,483,260 62
In Sept.....	12,856,636 10	14,104,647 51	14,690,362 47
In Oct.....	10,574,333 53	13,011,426 27	13,095,876 47
In Nov.....	9,079,082 36	9,711,039 46	9,938,679 71
In Dec.....	9,230,734 57	10,972,321 38	10,380,192 56

Total 12 mos.	\$140,632,065 96	\$143,724,917 22	\$154,607,761 58
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The exports from New York to foreign ports for the month of December were:—

	1880.	1881.	1882.
Dom. produce.....	\$33,620,453	\$29,430,216	\$32,419,628
For. free goods.....	978,709	1,156,495	1,569,477
Do. dutiable.....	415,127	643,635	620,348
Specie and bullion..	1,667,962	1,104,760	1,525,353

Total exports.....	\$36,682,251	\$32,335,106	\$36,134,806
Do. exclusive of specie.....	35,014,289	31,230,346	34,609,453

The exports from New York to foreign ports, exclusive of specie, for the years named were:—

	1879.	1880.	1881.	1882.
1st quar.	\$78,474,748	\$82,934,173	\$94,691,907	\$79,172,684
2d quar..	79,982,231	112,049,304	91,307,604	78,545,537
3d quar..	96,423,052	113,106,655	100,488,172	95,628,302
4th quar.	101,337,534	107,732,685	86,648,687	93,142,060
Total....	356,218,565	415,822,827	373,136,370	346,448,583

## Anthracite Coal Tonnage.

THE following is an official statement of the anthracite coal tonnage of last year compared with the previous year:

	1882.	1881.
Philadelphia and Reading Railroad.....	7,000,113.01	6,940,283.09
Lehigh Valley Railroad.....	5,033,789.19	5,721,869.12
Central Railroad of New Jersey.....	4,211,052.06	4,085,423.14
Delaware, Lackawanna and Western.....	4,638,717.03	4,388,968.17
Delaware and Hudson Co.....	3,203,168.04	3,211,498.09
Pennsylvania Railroad.....	2,332,973.18	2,211,363.09
Pennsylvania Coal Co.....	1,469,820.15	1,475,380.05
New York, Lake Erie and Western Railroad.....	330,510.14	465,230.09
Total.....	29,120,096.01	28,500,016.06

The stock of coal on hand at tide-water shipping points, December 31, 1882, was 562,116 tons; on November 30, 1882, 535,891 tons; increase, 26,225 tons. The amount on hand December 31, 1881, was 497,024 tons. Of the total production in 1882, 13,971,371 tons, or 47.98 per cent, was from the Wyoming region; 5,689,437 tons, or 19.54 per cent, from the Lehigh region, and 9,449,288 tons, or 32.48 per cent, from the Schuylkill region. The competitive tonnage, including all coal which, for final con-

sumption or in transit, reaches any point on the Hudson River or the Bay of New York, or which passes out of the Capes of the Delaware, was in 1881, 12,169,030 tons; in 1882, 12,018,764 tons.

## Immigration Statistics.

THE Chief of the Bureau of Statistics reports that, during the month of December, there arrived in the customs districts of Baltimore, Boston, Detroit, Huron, Minnesota, New Orleans, New York, Passamaquoddy, Philadelphia and San Francisco, 30,600 passengers, of whom 25,868 were immigrants, 2,895 citizens of the United States returning from abroad, and 1,837 aliens not intending to remain in the United States.

Of this total number of immigrants, there arrived from England and Wales, 3,029; Ireland, 1,397; Scotland, 531; Austria, 600; Belgium, 185; Bohemia, 335; Denmark, 315; France, 376; Germany, 8,420; Hungary, 1,571; Italy, 2,273; Netherlands, 227; Norway, 277; Russia, 410; Poland, 107; Sweden, 849; Switzerland, 1,047; Dominion of Canada, 3,699, and from all other countries, 211.

The total numbers of immigrants arrived from the principal foreign countries during the six months ended December 31, 1882, as compared with the same period of the previous year and during the calendar year, were as follows:

	Six mos. ended Dec. 31, 1882.	Six mos. ended Dec. 31, 1881.	Calen. year ended Dec. 31, 1882.
England and Wales.....	38,207	44,179	77,725
Ireland.....	20,286	27,077	69,461
Scotland.....	5,944	8,548	11,619
Austria.....	4,702	8,841	12,301
Germany.....	92,727	111,892	229,996
Italy.....	8,275	11,024	29,317
Norway.....	9,462	11,740	26,185
Sweden.....	16,581	22,118	58,742
Dominion of Canada.....	34,242	44,197	83,071
All other countries.....	40,043	38,741	109,575
Total.....	270,479	328,357	712,542

The arrival of immigrants in the customs districts above specified, comprise about ninety-seven per cent of the immigration to the entire country.

## Palatial Cars.

A COUPLE of elegant cars, built by the Pullman Company, to run between Boston and Montreal on the Central Vermont Railroad have just been delivered. They are similarly constructed and are called the "Pilgrim" and "Puritan," one of which is thus described by the *Montreal Witness*:

Externally it is neatly finished in a dark green with chaste ornamentation, but upon the interior the decorator's art has been exhausted. It is finished in highly polished mahogany, with most elaborate inlaid work in satin, walnut, ebony and other fancy woods. The roof is of whitewood with hand ornamentation. The upholstery and indeed all the finishings are of the most palatial character, and as one sits down, it is apparent that comfort and beauty have been equally considered in the whole design. A novel and most welcome feature is a charming little refreshment room, where tea or coffee, sandwiches, an oyster stew, etc., may be obtained on getting up in the morning. At one end of the car is a comfortable little apartment

completely shut off, to be used as a smoker's paradise, while at the other end is a luxurious little parlor for the ladies. There is but one door to it, and a neat little marble wash stand and drinking font. The wash rooms are comfortably large and most conveniently appointed. The car is heated by hot air pipes under every seat, securing uniformity of temperature. The whole magnificently furnished structure rides smoothly upon twelve 42-inch paper wheels. It is the finest car ever built by the company and cost upward of \$22,000. A prudent novelty worth mentioning is a small chest with a glass door, containing a number of tools, such as an axe, saw, sledge hammer, etc., which might be of great service in case of any mishap.

A TAILOR and his wife had frequent quarrels. On one occasion the wife responded to every reproach of her husband—"Scissors." Enraged at this, the tailor seized his spouse, and rushing out, plunged her into a neighboring pool. Bringing her head above water to give her breath, she still cried—"Scissors." After several duckings he brought her to the surface, when, being unable to articulate, she raised her hand and imitated the motion of a pair of scissors.

A PARLIAMENTARY return reports that the depreciation in the value of the crops in Ireland for the year 1882, in consequence of the unfavorable harvest, aggregated the sum of £5,118,167 as compared with the favorable year 1881, and £2,539,644 as compared with the average of the preceding ten years. The bulk of the loss was on the potato crop, which was 4,317,687 pounds as compared with the year 1881, and 2,274,431 pounds as compared with the average for the preceding ten years.

DAYTON, Ohio, is to have a new street railroad to compete with that of Fifth street. A local paper says the new line will be "the longest and most metropolitan in Dayton." Cincinnati capitalists are behind the scheme, which will cost from sixty-five thousand to seventy-five thousand dollars to carry out. More cash is available than will be needed.

THE Baltimore *Sun* states that the Chesapeake and Ohio Railway will in a short time move a large portion of its coal freight to deep water over the Richmond and Allegheny Railroad, satisfactory arrangements for this having been made.

THE Massachusetts Railroad Commissioners have decided that the reasonable requirements of communities along the line of a railroad must be met, even though the extension of such service entails loss to the company.

FOUR British steamers arrived at Baltimore on the 19th inst. with iron ore from Benisaf, Carthage and Marbella, the aggregate of whose cargoes was 7,183 tons.

THE whole duty of man is embraced in the two principles of abstinence and patience; temperance in prosperity, and courage in adversity.—*Seneca*.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY**.

Its **EIGHT** Trunk Lines traverse the best portions of **Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa**.

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs**, as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway**.

S. S. MERRILL,	A. V. H. CARPENTER,
General Manager.	Gen. Pass. and Tick. Agt.
J. T. CLARK,	GEO. H. HEAFFORD,
General Sup't.	Ass't Gen. Pass. Agt.

## Baughman's PATENT STORM-PROOF RAILWAY SIGNALS.

—FOR—

Stations, Crossings, Drawbridges, Switches, Caboose, or Rear-of-Train Lanterns, etc.

**They will not Blow out or Freeze out.**

There is but one opening in the top for the smoke to escape, and that opening is always kept on the opposite side from the wind by the top resting on a point, and is turned with the wind by the *weather vane* attached to the top.

It also takes air through the same opening through an outer chimney, a double top of the frame and tubes running down to the lamp.

The air can also be taken from the inside of the building through the gas pipe holder, which is another way to head off the storms.

**BAUGHMAN & MARKEY,**  
Albion, Ind.

SEND FOR CIRCULAR.

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Any of our readers who will enclose two three-cent stamps in a letter to the **Columbus Buggy Co., Columbus, O.**, will receive in return a beautiful engraving in colors, representing an **Australian scene**, and their manner of traveling in that country with **Ostriches** as a motor. They give this picture, (the packing costing six cents), to all who may send for it, desiring in this manner to make themselves more widely known to the people.

[Mention this paper.]

ESTABLISHED 1842.

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The only Paint unaffected by Moisture, Fumes from burning Coal Gas, Sun, Salt Air or Water.

**THIS IS RELIABLE.**

## INGERSOLL'S PAINT WORKS

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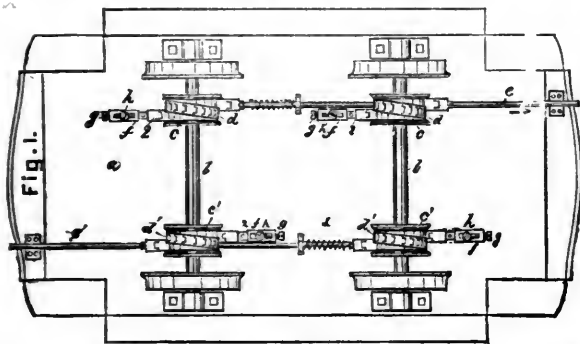
NEW YORK.



### New Brake for Street-Cars.

THE invention of Mr. W. B. Quigley, of Boston, patented December 5th last, relates to a car-brake, and is especially intended for use upon street-cars. We append a complete description, with illustrations.

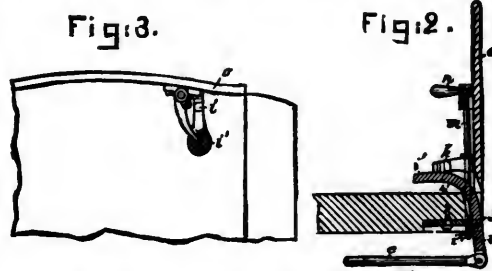
The brake has for its object to provide a brake which can be readily operated by the foot of the driver, thus leaving both hands free to manage the horses. The brake is applied by means of a bent lever, having one arm arranged to be acted upon by the foot of the driver standing on the platform, and its other arm connected with the rod by which the brake is applied directly to the wheels. The brake itself consists of a flexible band or chain wound wholly around a friction-drum fixed to the axles of the wheels in such a manner that the friction between the drum and chain tends to assist the action of the brake-lever in tightening the chain. As shown below, both axles are provided with drums and co-operating chains connected with a single rod extending to the end of a car and connected with the brake-actuating lever, and when the car is intended to run in both directions the said brake mechanism is duplicated at the two ends of the car.



The invention also consists in the combination, with the brake-actuating lever, of a locking device, by which the brake may be retained applied to the wheels when the driver leaves the car, it also being arranged to enable the brake to be applied by power of the hand instead of the foot, if desired.

Figure 1 is an under view of a car having braking mechanism embodying this invention; Fig. 2, a longitudinal section of a portion thereof, showing the brake-actuating lever and its locking device; and Fig. 3, a plain view of the parts shown in Fig. 2. The car *a* is of the construction usually employed for street-cars, it having two axles, *b b'* with connected pairs of wheels. The said axles *b b'* are provided with friction-drums *c c'*, having flexible friction devices, shown as chains *d d'*, encircling them, and attached at one end, as 2, to the car-body, and at their other end to rods *e e'*, one running to each end of the car. It will be seen that by moving the rod *e* in the direction of the arrow, Fig. 1, when the car is moving in the same direction the chains *a* will be tightened on the drums *c*, and that the friction produced between the said chains and drums tends to still further tighten the chains, thus causing them to act with a very powerful friction to resist the rotation of the wheels and axles. The said chains are connected at 2 with sliding pieces *f*, having adjusting-screws *g* to bear against studs *h*, that are fixed to the car-body. The said ends of the

chain may be adjusted to cause the tension derived from the movement of the rod *e* to be about equally divided between the said chains. The rod *e* is thus moved to apply the brakes by means of a bent lever, *i*, pivoted at 3 upon the platform of the car, it being shown as having one arm curved at 4 into a substantially horizontal position, and provided with a foot-piece, *i'*, to receive the pressure of the foot of the driver, the said foot-piece being shown in Fig. 2 as depressed and the brakes applied. In order to retain the said brakes applied without keeping the foot upon the foot-piece *i'*, a locking device is provided, consisting of an arm, *k*, fixed upon a shaft, *m*, provided with a handle, *n*, the said arm being adapted to engage the upper part of a treadle, *i*, and retain it in its depressed position, as shown in Figs. 2 and 3. When the brakes are not applied, the shaft *m* is rotated, so that the arm *k* and handle *n* lie against the dash-board *o* of the car-platform, and the curvature at 4 of the lever *i* is such, that by forcibly rotating the shaft *m* by means of the handle *n*, the arm *k* engages the said curved portion, and will depress the treadle *i* of the lever and apply the break. As shown in Fig. 1, the drums *c*, with their chains *d* and the connected parts, are operated from one end of the car, while the drums *c'*, with their chains *d'*, are operated by precisely similar apparatus at the other end of the car.



The spring, *r*, intending to draw back the rods *e e'* in the opposite direction to that in which they are moved by the brake-actuating levers in applying the brake, so as to thus retain the chains slack and inoperative except when the brake is positively applied. It is obvious that a single one of the drums *c* and chains *d* might be employed, thus applying the braking power only to one axle from either end of the car. The shoulder *i2* limits the backward movement of the lever *i* when it arrives at its normal position. Two spring are attached to the car above each of the drums, tending to keep the chains from touching the drums when the brakes are not applied. It will be seen by applying the brake by the foot, that the motion of the car furnishes the remainder of the power to resist the rotation of the wheels. No snow nor ice can interfere with the brake, which does not wear away car-wheels, and does not injure passengers on the front platform, as is sometimes the case by the present brake now in use. It has been found that the car can be stopped by this brake in less than one-half the time it takes to stop it by the brake now in use.

THE art of being able to make a good use of moderate abilities wins esteem, and often confers more reputation than real merit.—*Roche-foucauld*.

ADVERTISE in the Railroad Journal.

A PATENT has just been taken out in Washington for an invention, which is designed to save time and trouble in preventing the blockade of street railway cars in case of fire or other obstructions. It is termed a "turn-table," and is constantly attached to each car. Through its operations the conductor can hoist the car when fully loaded with passengers, turn half around on the cross track in a few seconds, and so run to the next corner, repeating the operation wherever necessary until he returns to his own line beyond the point of blockade.

THE new sleeping-cars for the Shore Line express of the Boston and Providence Railroad have the berths provided with spiral springs and hair mattresses, and the upper berths have a patent safety lock, which prevents it from locking in case of its shutting up when any one is occupying it, thus guarding against the danger of a person being confined beyond escape in case of a car going off the rails and turning over.

THE Burton Stock Car Company have contracted for a number of cars for the humane transportation of cattle, to be built by the Wason Manufacturing Company of Springfield, Mass. These cars will have the suspension car truck, with double elliptic springs and Janney coupling, and when completed will run between New York and Chicago.

NEARLY half of the Texas and Pacific eighty-mile reservation in Concho county, Mexico, was filed upon by different parties on the 15th inst.

### Coverings for Steam Pipes, Etc., Etc.

WE took occasion a few weeks since to call the attention of our readers to the advanced position occupied by the H. W. Johns Manufacturing Company of this city in the matter of non-conducting covering for steam-pipes, boilers, etc., etc. That we were fully justified in doing this is manifested in the fact that the above company have very recently completed large contracts for the following named parties: Church & Co., Greenpoint; D., L. & W. R.R. Co. at Hoboken and Kingsland; Morris & Cummings Dredging Co.; Pennsylvania Railroad Co.'s new ferry boats Baltimore and Chicago; Hotel Brandon, Park avenue; United States new Barge Office; J. Ellis & Co., Edgewater, N. J.; Orange Water-Works, Orange, N. J.; Eagle Pencil Co., city, and many others.

Six miles of track have been laid on the New Orleans and Mississippi Valley Railroad northward from Kenner. Another force of men as soon as the weather clears up will commence laying track from Kenner to New Orleans.

THE Boston, Revere Beach and Lynn Railroad Company has adopted very stringent rules regarding the use of liquor by its employes.

AN able man shows his spirit by gentle words and resolute actions; and he is neither hot nor timid.—*Chesterfield*.



ENGINEERS, Mechanics, Mill Owners, Builders, Manufacturers, Miners, Merchants, etc. will find in MOORE'S UNIVERSAL ASSISTANT AND COMPLETE MECHANIC, a work containing 1016 pages, 500 Engravings, 461 Tables, and over 1,000,000 Industrial Facts, Calculations, Processes, Secrets, Rules, etc., of rare utility in 200 Trades. A \$5 book free by mail for \$2.50, worth its weight in gold to any Mechanic, Farmer or Business Man. *Agents Wanted.* Sure sale everywhere for all time. For Illustrated Contents Pamphlet, terms, and Catalogue of 500 Practical Books, address NATIONAL BOOK COMPANY, 73 Beekman Street, New York.

E. W. Vanderbilt.

E. M. Hopkins.

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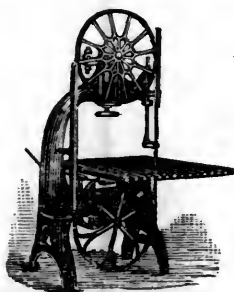
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Creosoted and Treated Lumber and  
Ties, Pine Boards, Plank and Di-  
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GENERAL RAILROAD SUPPLIES.



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CABINET, CARRIAGE, AND RAILROAD  
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Our Testing Machines have just been awarded the "Special Silver Medal" at the American Institute Fair of 1882, New York City.

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WATSONTOWN, PA.



## PARDEE, SNYDER & Co., LIMITED,

Proprietors.



Manufacturers of Mail, Baggage, Box, Gondola, Flat, Gravel, Ore, Coal, Mine, and Hand Cars; Kelley's Patent Turn-Tables, and Centers for Wooden Turn-Tables; Car Castings, Railroad Forgings, Rolling-Mill Castings, Bridge Bolts, Castings.

We have, in connection with our Car Works, a Foundry and Machine-Shop, and are prepared to do a general Machine Business.

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**HIGH BRIDGE, N.J.**  
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**STEEL TIRED WHEELS**  
MADE UNDER  
SAX & KEAR'S PATENT  
FOR LOCO TRUCK AND TENDER  
AND PASSENGER CAR SERVICE.

## The D. K. Miller Improved Padlock.

SUPERIOR TO EVERY OTHER

In Mechanical Construction, Security, and Durability.

MADE OF BRASS,

With Springs of the Celebrated Phosphor-Bronze,

And Warranted to Stand in Every Climate.

### UNPICKABLE, NO RUSTING OR CORRODING.



Shown by general use to be the best Padlock in the Market for Railway Cars, Switches, Tool Boxes, and for all other purposes for which padlocks are used.

Every Padlock with a different Key and Master Key to unlock them all; or all Padlocks with same key if required.

Send for Circulars with Details and Prices.

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## IMPORTANT ANNOUNCEMENT TO INVENTORS.

THAT department of the AMERICAN RAILROAD JOURNAL which contains descriptions of new inventions properly coming within its range of subjects, is regarded with great notice and favor, particularly by those directly interested in learning what the latest applications of mechanical ingenuity in railroading are, and by those who have produced inventions which they desire to make as widely known as possible.

The large and widespread circulation of this paper, its prestige as the oldest railroad journal in the world, and the weight attached to its contents by the general consent of leading railroad men in all countries, give such value to its carefully prepared descriptions of new machinery and appliances as cannot be found outside of its columns.

The interest manifested by inventors in supplying us with information of their doings, and the eagerness with which this is received, encourage us to give an increased attention to that department of this paper treating of new inventions.

We therefore repeat our invitation to all persons, who have produced what they regard as improvements coming within the range of railroad operations, to communicate with us promptly regarding the same.

All matter sent us will be thoroughly examined and considered, and no inventions in our opinion likely to be practicable and useful will be passed over without receiving due attention from us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF JANUARY 16, 1883.

- 270,573. Check Valve: George F. Blake, Belmont, Mass.
- 270,574. Steam Pumping-Engine: George F. Blake, Belmont, Mass.
- 270,575. Duplex Pumping-Engine: George F. Blake, Belmont, Mass.
- 270,576. Valve-Gear for Steam Pumping-Engines: Albert J. Blakeslee, Duquoin, Ill.
- 270,583. Brake-Shoe: Charles E. Gore and Joseph Eisele, Lafayette, Ind.; said Eisele assignor to Benjamin F. Masten, same place.
- 270,603. Railway Car Ventilator: Edward H. Mott, Chicago, Ill.
- 270,604. Railroad-Signal: Louis R. Munson, Brainerd, Minn.
- 270,614. Steam-Boiler-Tube Cleaner: Isaac L. Stover, Centralia, Ill.
- 270,618. Screw-Cutting Die: Emile J. Voegtlin, Telford, Pa.
- 270,621. Power-Converter: James F. Winchell, Springfield, Ohio.
- 270,626. Lubricator: William H. Bowen, Lincoln, R. I.
- 270,633. Rotary-Cutter: James H. Busell, Boston, Mass.
- 270,636. Friction-Clutch: Cyril C. Child, Boston, Mass.
- 270,637. Metallic Railroad-Tie: Joseph Clark, Brooklyn, N. Y.
- 270,638. Steam-Trap and Boiler-Feeder: John Collins, Des Moines, Iowa.
- 270,651. Fare-Box: Francis A. Farrell, Brooklyn, N. Y.
- 270,653. Feeding Air to Furnaces: Thomas Mara Fell, Brooklyn, N. Y.
- 270,662. Traction-Wheel: Lewis Hall, Metamora, Ill., assignor of one-fourth to Andrew G. Scherer, Peoria, Ill.
- 270,671. Means for Operating Pumps in Deep Wells and Mines: John H. Huffer, Jacksonville, Oreg., assignor of one-fourth to C. C. Beekman, same place.
- 270,673. Belt-Fastener: Charles I. Humphreys, Boston, Mass.
- 270,678. Hand-Car: Reberto H. Johnson, Palestine, Tex.
- 270,684. Steam-Engine Governor: Thomas Malcolmson, Oil City, Pa., assignor of one-half to O. B. Goodwin same place.
- 270,688. Mechanical Motor: Risdon M. Odell and David L. McKirick, Sr., Baton Rouge, La.
- 270,689. Mining-Car: Gustav Olsen, San Francisco, Cal., assignor of one-half to Edward A. Rix, same place.

- 270,692. Feed-Water Heater: Richard W. Pelton, Townsend, Sandusky county, assignor of one-half to M. F. Cowdery and O. P. Cowdery, Sandusky, Ohio.
- 270,694. Car-Coupling: Mathias Peters, Jr., Chicago, Ill.
- 270,705. Bell-Cord Coupling: Charles H. Tumey, Austin, Tex., assignor of one-half to Hancock & Hancock, same place.
- 270,707. Track-Gate for Railways: Henry R. Vordermark, Indianapolis, Ind.
- 270,727. Railroad Signal-Lantern: James H. Berry, Greenville, S. C., assignor to himself and William M. Berry, Mount Airy, Ga.
- 270,732. Car-Brake: Edmund R. Bristol, Madison, Wis.
- 270,743. Exhaust-Nozzle for Steam-Engines: Willard A. Clarke, Stillwater, Minn., assignor to the Northwestern Manufacturing and Car Company, same place.
- 270,744. Cut-Off Valve: Willard A. Clarke, Stillwater, Minn., assignor to the Northwestern Manufacturing and Car Company, same place.
- 270,757. Journal-Box Attachment: Enos Curtiss, Findlay, Ohio.
- 270,759. Compound Disk-Engine: Frank Darkin, New York.
- 270,762. Lubricator: Levi P. Dollison, Wabash, Ind.
- 270,768. Car-Coupling: John Elder, St. James, Mo.
- 270,710. Flue-Expander: John Faessler, Moberly, Mo.
- 270,773. Furnace: Joseph Flannery, Philadelphia, Pa.
- 270,776. Excavating or Ditching Device for Attachment to Cars: Dennis Freel, Chariton, Iowa.
- 270,791. Locomotive Head-Light: Arthur Harris and George M. Clark, Chicago, Ill., assignor to J. McGregor Adams, same place.
- 270,798. Car-Brake: Thompson Hersee, Buffalo, N. Y.
- 270,804. Head-Light: Edwin S. Jenney, Syracuse, N. Y.
- 270,805. Lubricator: Chas. H. Jewell, Chicago, Ill.
- 270,840. Spike: William H. Perry, Sharon, Pa.
- 270,842. Reversing-Gear for Engines: Francis W. Randall, Tekonsha, Mich.
- 270,860. Coupling-Link: Isaac H. Trabue, Louisville, Ky.
- 270,865. Car-Coupling: Albert S. Way and John W. Lutz Springfield, Ohio.
- 270,869. Car-Wheel Chill: William Wilmington, Toledo, Ohio.
- 270,871. Brake-Beam for Railway-Cars: William Woodcock, Elizabeth, N. J.
- 270,874. Car-Door Fastening: Edward J. Brooks, East Orange, N. J., assignor to E. J. Brooks & Co., New York.
- 270,875. Steam-Engine Cylinder: William A. Clarke, Stillwater, Minn., assignor to the Northwestern Manufacturing and Car Company, same place.

## A Smoke Consuming Engine.

A new engine, which utilizes Mallet's device for consuming smoke, is about to be tested on the New York, Lake Erie and Western Railroad, on which a consolidated locomotive is being equipped. The smokestack disappears entirely, and in its place is a man-hole merely. The gases produced by the complete combustion will escape about the periphery of the extended boiler casing. The fan is worked by a small engine in the smoke-box, and a powerful draft maintained when the locomotive is at rest. The exhaust steam passes along the side of the locomotive to the tender, which is divided into three compartments. The upper one is for fresh water, the middle one contains copper tubes connecting with the external air in front and with a suction fan in the rear. The exhaust-steam circulates around the copper tubes, and becomes in part condensed, the resulting hot water falling into the lower compartments. The uncondensed steam comes in contact with a spray of water falling from the upper compartment, and the condensed water enters the lower department, whence hot water is pumped into the boiler. The air used to condense the steam is employed for heating

and ventilating cars, being delivered through a conduit which, with coupling ends, passes along beneath the cars. This system does away with coal stoves or heaters, and supplies the car with fresh air and warm air without danger of fire in the case of a smash-up.

## The Berdell Mortgage.

JUDGE NELSON, of the United States District Court, Boston, Mass., rendered a decision on the 12th inst., sustaining the demurrer in the case of William F. Graham v. Boston, Hartford and Erie Railroad Company et al.

This was a bill in equity, filed July 8, 1880, by a shareholder of the Boston, Hartford and Erie Railroad Company, in behalf of himself and every shareholder and creditor of the company, to set aside as invalid a mortgage given by the company on its railroad, franchise and property to Robert H. Berdell, Dudley T. Gregory and John C. Bancroft Davis, as trustees, to secure the payment of an issue of the bonds of the company, to the amount of twenty millions of dollars. The defendants are the Boston, Hartford and Erie Railroad Company, and its assignees in bankruptcy, the New York and New England Railroad Company, which is at present in possession of and operating the railroad, certain persons now living, and the personal representatives of others now deceased, who have, at different times, acted as trustees under the mortgage, the treasurer and receiver-general of the Commonwealth of Massachusetts, George Ellis, Frederick A. Lane and W. C. Eayrs. The case was heard upon separate demurrers to the bill filed by the New York and New England Railroad Company, by the assignees of the Boston, Hartford and Erie Railroad Company, by Hart & Clark, two of the trustees, and by the executrix of Mark Healey, a deceased trustee. Among the causes of demurrer assigned by each of these defendants, are want of equity, laches and want of jurisdiction in the court. Judge Nelson overrules the demurrer for want of jurisdiction and sustains those for want of equity and laches.

## English Pattern Sleeping-Cars.

Two new sleeping-cars, specially constructed by the Pullman Company, on what is called the English pattern, arrived on Tuesday night at King's-cross station. These carriages differ from those at present in use in having side entrances, thereby dispensing with the end platforms, and in being divided into four compartments, so as to combine the comfort and, to a certain extent, the privacy of an English first-class carriage with the convenience of the sleeping-car. Each compartment contains cushioned seats as well as berths and beds for four persons. There is a continuous passage from one end of the car to the other for the use of the attendant, but ordinarily each section is separated from the rest by doors and curtains. The new cars are each rather over twelve yards long and weigh about thirteen tons. They were built in America, shipped to England in sections, and put together and finished at Derby, and have been named "Balmoral" and "Culross."—*London Railway Times*.

# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 5.]

NEW YORK, FEBRUARY 3, 1883.

[WHOLE No. 2,440.—VOL. LVI

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matters which the readers of such a paper as this are gratified to find within its columns.

## CONSOLIDATION.

THE Addison and Northern Pennsylvania Railroad Company of New York, and the Addison and Northern Pennsylvania Railroad Company of Pennsylvania, have filed in the office of the Secretary of State at Albany, N. Y., a certificate of consolidation, with the name of the Addison and Northern Pennsylvania Railroad Company and a capital of \$600,000. The route of the road in this State is from Addison, a station on the New York, Lake Erie and Western Railroad, to the boundary lines of the States of New York and Pennsylvania, to connect with the road of the same name now building in Pennsylvania.

THE Brinkley and Cotton-Plant Railroad has consolidated with the Batesville and Brinkley Railroad, and the twenty-five miles completed from Brinkley, Ark., to Colona were transferred to a construction company, which guarantees to complete the road to Newport, on the St. Louis and Iron Mountain Railroad, by September 1. The stockholders elected a new director, who elected William Black president, I. W. Martin secretary and treasurer, and B. C. Brown attorney.

## ORGANIZATION.

AN election for directors of the Kentucky Central Railroad Company was held at Covington, Ky., on the 23d ult., and resulted in the choice of the following gentlemen: C. P. Huntington, G. H. Pendleton, George H. Bliss, C. Alexander, B. S. Cunningham and John Echols.

THE Newburg, Dutchess and Connecticut Railroad Company has re-elected its board of directors with two exceptions. Richard C. Van Wyck, elected in place of Judge J. N. Whiting, and S. J. Wright to fill a vacancy. Gen. John S. Schultz was re-elected president and W. A. Wells secretary.

At a meeting of the stockholders of the Newark, Somerset and Straitsville Railroad Co., held at Columbus, Ohio, on the 24th ult., the

following directors were elected: Robert Garrett, S. Spencer, Osman Latrobe, B. Dunham, T. J. Davis, William Shields, J. C. Larmell, C. H. Kebler, David Lee, William Franklin and W. H. Harrison. The Board elected David Lee president and J. Hope Suter secretary and treasurer.

At a meeting of the directors of the Southern Pullman Palace Car Company at Louisville, Ky., on the 25th ult., the vacancies in the board were filled by the election of O. A. Lochran, C. H. Davis and Thomas H. Harp. Mr. Harp was also chosen second vice-president. George F. Brown will assume the duties of general superintendent, with headquarters in Louisville. James Martin will be assistant superintendent.

At a meeting of the stockholders of the Columbus and Xenia Railroad Company, held in Columbus, Ohio, on the 25th ult., the following directors were elected: J. R. Swan, Robert Neil, Henry C. Noble, P. W. Huntington, R. A. Harrison, John W. Andrews, George M. Parsons, Alfred Thomas, C. P. Cassilly, Henry Hanna and Thomas D. Messler. The Board organized by the election of J. R. Swan as president, and Robert S. Smith secretary and treasurer.

A MEETING has been called by the purchasing trustees of the Marietta and Cincinnati Railroad to be held in Chillicothe, Ohio, on the 7th inst., for the purpose of determining the future name of said company; deciding, for the time being, the amount of its capital and the number of shares into which such capital shall be divided; fixing the number of directors and their term of office; electing such directors (a majority of whom shall be residents of Ohio), and doing all things necessary or proper to reorganize the company.

## INCORPORATION.

THE South Pennsylvania and Ohio Railroad Company has been incorporated in Ohio with a capital of \$50,000; also, the Citizens' Street Railroad Company, of Dayton, Ohio, with a capital of \$100,000.

ARTICLES incorporating the Jonesboro and Cape Girardeau railroad company were filed with the secretary of State of Illinois on the 15th ult., by Thomas F. Bouton, Wm. S. Day, Oliver P. Baggott, Alvan Cook, of Jonesboro, Ill., and Charles L. Otrich, of Anna, Ill. The

capital of this company is \$100,000, with which it is proposed to build a railroad from Jonesboro, Ill., to Cape Girardeau, Mo.

THE Centre County, Penn., Democrat says that a charter has been granted to the Nittany and Southern Railroad Company to build a road connecting with the Susquehanna and Southwestern Railroad from Mill Hill to Bellefonte. The directors are: Hon. W. A. Wallace, S. R. Peale, Frank McLaughlin, John Hickey, R. R. Peale, W. H. Brown, Thomas Yardley, J. J. Pie and W. W. Morrison.

THE papers for the incorporation of a company to build a railroad from Peoria, Ill., via Quincy, to Sioux City, Ia., were filed at Peoria, Ill., on the 25th ult. The capital stock is placed at \$13,700,000, and divided into 137,000 shares. The incorporators are John G. Fonda, John H. Duken, Fred N. Menke, Quincy; William Hill, John Farlay, Warsaw, Ill.; Henry A. Osborn, Chicago; David M. Kelley, Green Bay, Wis.; W. H. M. Siston, Walter Seranton, Samuel Marsh, New York City; Henry Ketcham, New London, Wis.

ARTICLES of incorporation have been filed in California of the San Francisco and Colorado River Railroad Co., with A. E. Davis, A. Grover, Chas. Iverson and George C. Prentice of San Francisco, and R. M. Garrett, of Alameda, as directors. The capital stock is \$20,000,000, divided into \$100 shares. The road is to be constructed between San Francisco and the Colorado river, reaching the latter at or near the 35th parallel, in the State of California. The road will be about 650 miles in length. A. E. Davis is Treasurer of the company, and the papers filed in the Secretary of State's office state that \$100,000 has been paid in.

ARTICLES of incorporation were filed in the office of the Secretary of State of Illinois on the 24th ult. of the Gilman, State Line and Rochester Railroad Company. The proposed road is to be constructed from Gilman, in Iroquois county, Ill., to the State line between the States of Illinois and Indiana on the east line of Iroquois county, to connect with a railroad to be constructed from Rochester, in the State of Indiana, through Rensselaer, in the State of Indiana, to said State line on the east line of said Iroquois county, and to run in a northeasterly direction from Gilman to State line. Capital stock, \$500,000. Incorporators: Paul



H. Dennis, Chicago; John Shule, James H. Allen and Elias Wenger, Gilman; John Lee, Rochester, Ind.; A. D. Ioner, Kewana, Ind.; and Frank E. Newton, of Litchfield, Ill.

THE Detroit, Indiana and St. Louis Railroad Company has been incorporated in Indiana. The company has a capital stock of \$2,000,000, and proposes to build a road from Fayette, O., to Bloomington, Ill., a distance of 280 miles. The line of the road passes through the counties of Fulton and Williams, in Ohio; Steuben, DeKalb, Noble, Kosciusko, Fulton, Pulaski, Jasper and Newton, in Indiana; and Iroquois, Ford, Livingstone and McLean in Illinois. The directors are Hiram Iddings, Owen Black, William Worden, John Singery, S. W. Oldfather, Amos Kist, A. B. Ball, Albert Tucker, F. M. Pearman, W. Bybee, A. J. Dunear and Horace Tucker.

A CHARTER was issued at Harrisburg, Penn., on the 25th ult. to the Harrisburg and Western Railroad Company. The object being to construct a line from Harrisburg to a connection with the Pittsburg, McKeesport and Youghiogheny Railroad in Allegheny county. The road is to be 300 miles long, and will pass through the counties of Dauphin, Cumberland, Franklin, Huntington, Fulton, Bedford, Somerset, Westmoreland, Fayette, Allegheny and Washington. The capital is placed at \$18,000,000. The affairs of the company will be managed the first year by the following Board of directors: Richard K. Shelden, Philadelphia; William T. Sanger, Harrisburg; G. M. Watson, George O. Morgan and George P. Grover, Allegheny City; P. T. McNamara, Pittsburgh, and Frederick J. Grower, Harrisburg. Nearly all the stock is in the name of Richard K. Shelden. Both Shelden and Grover are officers of the Southern Pennsylvania Railroad Company. Richard K. Shelden is president of the company. The construction of this road will give the Philadelphia and Reading Railroad a direct connection, via Harrisburg and Pittsburgh, with the West.

### CONSTRUCTION.

ABOUT \$130,000 have been raised to start the San Antonio and Corpus Christi Railroad.

THE Belvidere Delaware Railroad is to be double-tracked from Belvidere to Lambertville.

THE location of the Malvern and Pine Bluff Railroad was commenced at Malvern, Ark., on the 26th ult.

THE Natchez, Red River and Texas Railroad is now completed and in running order to Cross Bayou, a distance of seventeen miles from Vidalia, La.

THE extension of the Philadelphia and Reading Railroad from Williamsport to the Jersey Shore, Pine Creek and Buffalo Railroad has been completed.

THE contract for building the tunnel on the Pennsylvania's new line, near Phoenixville, has been awarded to John McFadden, of Lancaster. It will be 900 feet in length.

IT is expected that the Williamsport and Clearfield Railroad, which is now under contract, will be completed by August next. It is

to be operated, under a traffic agreement, by the Pennsylvania Railroad Co. The officers of the company are: Cornelius V. Sidell president, C. S. Riley vice-president, and Charles D. Ingersoll secretary and treasurer.

THE Bridgton and Saco River Railroad, connecting Bridgton with the Portland and Ogdensburg Railroad at Hiram, Me., was opened for business on the 29th ult.

THE Eureka Springs railroad branch of the St. Louis and San Francisco line from Seligman to the Springs, was completed on the 24th ult., and a train was run to the Springs.

THE grading of the Canada Atlantic Railway has been completed as far north as Hemmingford, and the contract for all the depots from there to Alburgh Springs has been let, the same to be completed before October 1.

THE Richmond and Alleghany Railroad Co. is constructing a bridge across the North River at Lexington to make a connection with the Valley Railroad, the extension of which to Lexington is to be completed by the 1st of June.

THE contractor for the construction of the Delaware River and Lancaster Railroad between Phoenixville and Falls of French Creek, commenced work in South Coventry township, six miles south of Pottstown, Penn., on the 25th ult.

THE work upon the Philadelphia, Germantown and Chestnut Hill Railroad has been commenced in earnest, and it is fully expected that the road will be completed before the end of the year. Henry D. Welsh is president of the company.

A LETTER from Richmond, Va., says that "the Chesapeake and Ohio Railroad is to be double-tracked at a cost little short of \$10,000,000. Work has been commenced at three points of the eastern division and at four points on the West Virginia Division, and it will require about two years to complete it."

THE New Orleans *Times-Democrat* says that the Southern Pacific extension will be built from Vermilionville to West Baton Rouge at an early day. Between West Baton Rouge and Vermilionville a greater portion of the Grosse Tete road will be used, and not more than fifty miles of road-bed will be built for the new line.

THE Memphis extension of the Kansas City, Fort Scott and Gulf is now completed and regular trains running to West Plains, Howell county, Mo., 315 miles from Kansas City. The line will reach Augusta, Oregon county, Mo., about the 20th inst., and will be completed and open for business to Memphis, Tenn., about the 1st of June.

THE Columbus (Ohio) *State Journal* says that the completion of the Ohio Central Railroad insures the construction in West Virginia of three other railroads, to wit: 1st, A railroad down the Ohio River from Wheeling to Parkersburg, thence to Point Pleasant. 2d, A railroad on Elk River. 3d, A railroad on Gauley River. Active steps are now being taken by capitalists for the early construction of these three important feeders to the Ohio Central Railroad.

THE Cecil (Md.) *Democrat* says "that the engineer and surveyors of the Baltimore and

Ohio Railroad Company have completed three lines between the Bush and Gunpowder rivers, and recently removed their tents from the neighborhood of Joppa to near Bush Furnace. It is believed that the Wilmington and Western Railroad Company will shortly be consolidated with the Baltimore and Ohio, and the work of constructing the new line between Baltimore and New York be pushed to an early and successful termination."

A RECENT writer says: "On a fine day the panorama of the African coast from Cape Town to the Cape of Good Hope is well worth seeing. First comes the gaunt outline of the Lion's Head, with its helmet-shaped crest of rock standing out black and stern against the sunny sky, and around its base the trim white houses of Sea Point, the inhabitants of which salute us after a novel fashion by casting successive flashes of light upon our deck from looking-glasses held up to the sun. Then follows the long procession of dark-gray precipices fancifully called 'The Twelve Apostles,' succeeded by endless ranges of craggy hills, bare for the most part, but flecked here and there with scrubby patches of vegetation, through which the sandy soil peers incessantly, looking (as a facetious passenger remarks with a grin) 'just like a nigger with his head shaved.' At length, when the night is already advanced, the rising moon shows us a long dark ridge ending in two grim pyramids of rock, from the furthest of which the Cape light-house looks out with its single eye of fire over the dim waste of waters below. Unchanged and unchangeable, the stern old cliffs watch our passage."

NO COUNTRY follows out more religiously than South Africa the good old Arab maxim, "Agit lil Shaitaun" (hurry belongs to the devil). The famous German professor who, when bidden to a wedding, traveled so slowly that he came just in time for the subsequent christening, would have been quite at home in Namaqua Land or Kaffraria. When a man loses a train, he goes quite contentedly by the one following. When he misses a steamer, he comforts himself with the recollection that there will be another next week. Everything seems bent upon doing its utmost to avoid unnecessary haste. The trains go at the rate of steamers, the steamers at the rate of stage-wagons, and the stage-wagons at a pace which might be overmatched with ease by any athletic caterpillar.

A PHILADELPHIA paper expresses a wish for a "mechanical contrivance to keep a street-car on the track, or to throw it directly back if it jumps off." To which the Harrisburg *Telegraph* replies that "such a thing does not trouble Harrisburg. To keep a street-car on the track all that is necessary is for a butcher wagon to claim the right of way. With regard to the second need, a practical answer to it may be seen on our streets a dozen times a week, when the driver stands on the front platform and swears at the horses, while the passengers slush around in the snow and lift the car on the track with a mechanical resignation born of constant practice."

SUBSCRIBE for the Railroad Journal.

### Illinois Central Railroad.

THE following extract from the minutes of the meeting of the directors of the Illinois Central Railroad Company held on the 17th ult., has been printed:—

"The report of Mr. William H. Osborn, Chairman of the Chicago, St. Louis and New Orleans Railroad Company, addressed to this board under date of December 30, 1882, accompanied by the report of the Hon. James Fentress, general solicitor, addressed to him under date of December 8, 1882; and also the report of Mr. James C. Clarke, general manager of the Chicago, St. Louis and New Orleans Railroad Company, addressed to the shareholders of that company under date of January 1, 1883, having been submitted and read, it was, on motion of Mr. Webster, duly seconded.

"Resolved, That these reports be accepted by this board, printed, and a copy thereof transmitted to each shareholder of the Illinois Central Railroad Company, and to each holder of the leased line stock certificates issued against the shares of the Chicago, St. Louis and New Orleans Railroad Company.

"That this board desires to express and place on record its high appreciation of the wisdom, zeal and unflagging fidelity with which Mr. Osborn, Mr. Clarke and Mr. Fentress and every other officer whose work has come under the observation of this board, have conducted the affairs of the Chicago, St. Louis and New Orleans Company since the property was placed in their hands. And the president of the Illinois Central Company is hereby directed to express to those officers of the Chicago, St. Louis and New Orleans Company the thanks of this board for the gratifying results which their labors have done so much to accomplish.

"The following, moved by Mr. Elliott, and duly seconded, was also adopted:—

"In view of these highly satisfactory reports, the board deems it desirable to call the attention of the Illinois Central shareholders specifically to the increased value of the property resulting from the intelligent and unwearied efforts of the officers who have been charged with the care and development of the Southern line; therefore, be it

"Resolved, That the board recommends to the shareholders at their next annual meeting to take such action as they may deem best to express their appreciation of the results thus obtained and their recognition of the services rendered."

### The Growth of the Locomotive Engine.

A LECTURE was delivered on the 26th ult. before the Engineering Society of the School of Mines of Columbia College, by Prof. F. R. Hutton, of that Institution, on the "Growth of the Locomotive Engine." The lecture was illustrated by drawings of the earliest types of the locomotive—the first of which, the Professor said, was constructed by George Stephenson in 1829—with various subsequent designs by the same inventor. Pictures were also exhibited of the Trevithick engine, the Royal George, built by George Stephenson in 1825; also the Rocket, which on the occasion of its first trial ran over

and killed the celebrated Member of Parliament from Liverpool, Mr. Husskisson. This engine is now preserved in the South Kensington Museum, London. The first attempt to use steam for locomotive purposes was attributed to Sir Isaac Newton, in 1680. In the opinion of the professor the honor of first utilizing the steam traction engine in this country belongs to Oliver Evans, and the event dates back as far as 1804. At this time the use of steam on a railroad first began, and was used for colliery purposes. The lecturer then described the various forms of the locomotive engine of the present day, and explained its essential parts. He treated of the various kinds of freight and passenger engines—the former with great weight, a number of small driving wheels, and great power; the latter with two large driving wheels and high speed. "In determining the pulling power of an engine," Prof. Hutton said, "the great point of consideration, aside from the size of the boiler and the area of the cylinder, is to keep the driver from slipping. This is to be secured by increasing the weight on the drivers. This weight, if concentrated directly on one point, would crush the wheels or track. This difficulty is obviated by increasing the number of driving wheels, and so on, distributing the weight. The Great Mogul engines have ten wheels. The larger the driving wheels the greater the speed, and the smaller the wheels, the greater the strength, is the law. For this reason, the fastest engines have only one pair of driving wheels, and that very large, while the Mogul and Consolidation engines, used for coal traffic and heavy grades in Pennsylvania, have small driving wheels and many of them."

The Professor also related the story of a race between Peter Cooper's engine and an old gray horse more than half a century ago. He said that one of the chief obstacles to the attainment of high speed in those days was the lack of a sufficient draught through the fire box. In the stack of Peter Cooper's small, experimental engine, was a fan wheel, run by a belt, to increase the draught. With this device, it was thought that the locomotive would outrun the car horse, and a race was arranged, the engine and the horse car to run on parallel tracks. The start was even, the lecturer said, but the engine soon began to draw away from the nag. The distance was increased, and the prospect of a brilliant victory for the locomotive was all that could have been desired, when the belt slipped off from the fan wheel. Peter Cooper lacerated his hands in an attempt to readjust the belt, but it proved fruitless, and instead of distancing the old gray horse, the locomotive and the experienced nag came in neck and neck.

THE Allen Paper Car Wheel Company have just contracted with the Northern Pacific Railroad to furnish wheels for their entire passenger equipment. This is not merely for their present equipment but for all sleeping, passenger, baggage and postal cars, and for locomotives and tenders to be built. While the Allen Paper Car Wheel Company are to be congratulated on securing so large a contract, the Northern Pacific is to be complimented on its decision to secure uniformity in equipment, as well as upon its selection of the paper wheel.

### Heating and Lighting Cars.

A CORRESPONDENT of the New York World, writing from Reading, Penn., under date of January 24, referring to an editorial which appeared in that paper on the 22d, in which it was stated that "after all the horrible accidents—going back as far as 1867—no attempts has been made by any railroad company to prevent the loss of life in future," goes on to say: "Immediately after the Angola horror the Philadelphia and Reading Railroad Company took the stoves out of their passenger cars and put heaters under the cars in such a manner as to render it impossible in case of a run off or smash up to set fire to the wreck. To prove this I would call attention to the dreadful accident that occurred on the Pickering Valley Railroad, one of its branches, a few years ago, when the train was dashed over the embankment in consequence of a wash out. If those cars had had the stoves inside there would, perhaps, not have been a life saved. Every one of the cars that went down had two heaters attached on the outside. When the wreck was cleared away it was found that the heaters were torn from the cars and left far from the broken wood work. These same cars were lighted with compressed gas, which immediately went out. If there had been coal-oil lamps instead there would have been a repetition of the Angola or Ashtabula horror.

"If any of your many readers will stop at the New Jersey Central depot in Jersey City and ask for the passenger cars that run on the Bound Brook route, they can see the radical reform which you ask in heating and lighting. The much lamented Webster Wagner, who lost his life in one of his own drawing-room cars, acknowledged the safety and superiority of the Reading plan over all others. In 1868 he ordered two of the Reading heaters with the intention of applying them to one of his drawing-room cars in Gilbert, Bush & Co.'s shops, at Troy. The heaters were attached to the car, but the old story is that in using the heaters it interfered somewhat with the beauty and adornments of the interior of the car in putting in the safety flues. The result was they put in place the salt water heaters—the same kind of heaters that destroyed the life of Mr. Wagner."

THE president of the Market Street Passenger Railway Company, of Philadelphia, has adopted the plan of furnishing the drivers and conductors between trips with hot coffee. The beverage is served out, with milk and sugar, from 11 A. M. to 11 P. M. every day. About seventy gallons are made and distributed daily, which is an average of six pints to each of the 200 employes. The men are not limited to any particular quantity, but are allowed all they want to drink. The average daily consumption has been about 1,120 cups of the steaming beverage.

"THAT man is a phrenologist, Pat." "A phat?" asked Pat, puzzled. "A phrenologist." "Phat's that?" "Why, a man that can tell, by feeling of the bumps on your head, what kind of a man you are." "Bumps on me head, is it?" exclaimed Pat. "Then I should think it would give him more of an oidea what kind of a woman me wife is."



# AMERICAN Railroad Journal

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to give us early information regarding the above, that  
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## PRINCIPAL CONTENTS.

Consolidation .....	97
Organization .....	97
Incorporation .....	97
Construction .....	98
The Growth of the Locomotive Engine.....	99

### EDITORIAL:—

What Ails The Union Pacific?.....	100
Electricity as a Motive Power .....	101
Interlocking Switch and Signal Apparatus.....	102-103
Stock Exchanges and Money Market.....	104-106
Railroad and Canal Dividend Statement.....	108
Railroad Earnings—Monthly.....	110
The Social Glass.....	112
Electric Car-Brake .....	114
Railway Speed.....	118
List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, etc.....	120
Persian Railways.....	120

IN a letter addressed to Mr. THOMAS LOWRY, attorney-at-law, Minneapolis, Minn., Mr. Littell, president of the American Street Railway Association, says: "I think it desirable to call our convention together and meet at the same time you hold yours in Chicago. I am perfectly agreeable to such an arrangement." The meeting of representatives of both the railroad and street railway interests at one time and in one place, could not fail to bring about developments of great interest and importance to both. We hope Mr. Littell's wish will be gratified.

AN International Electric Exhibition will take place in Vienna, Austria, this year, to be opened on the first of August and closed on the thirty-first of October. Those who visited the Universal Exhibition at Vienna in 1873, cannot fail to have pleasant recollections of the same; and all our readers will learn with interest that the forthcoming exhibition will be made an object eminently worthy of the attention of all who either take part in or visit it. As American electricians are among the foremost in the world, we take it for granted that their part in the coming exhibition will adequately represent the interest they feel in the progress of electrical science, especially in its latest adaptations to the convenience and comfort of man. The general reader is reminded that Vienna is a magnificent city, much handsomer now than in 1873, since which date many fine buildings have been erected. We make the above announcement very cordially and in the earnest hope and belief that the United States will make a creditable exhibit at the Vienna Electric Exhibition of 1883, and that the host of our people who will cross the Atlantic this year will not fail to visit the Austrian capital and contribute their share of encouragement towards the event which will give it particular interest between the dates named.

## WHAT AILS THE UNION PACIFIC?

THE week in Wall street has been signalized by a remarkable revolution in the course of prices of two stocks—the Union Pacific and the Denver and Rio Grande. The market estimation of the Union Pacific, which has been for two or three years remarkably high, has quite recently taken a tumble, and investors as well as the general public are inquiring what is the occasion for it. During the year 1881 the stock sold as high as 131½, and has fallen within the past week as low as 98½. The company continues to pay the same rate of dividends upon the stock—seven per cent, payable quarterly—but there is, nevertheless, a suspi-

cion that the lowest point has not yet been reached. President SIDNEY DILLON is reported to have said "It has no construction companies or syndicates to provide for, the branches and feeders built by the Union Pacific are owned by the company, and the bonds issued on them are in the hands of the company. The earnings from the branches go direct to the stockholders. The branches now earn sufficient to pay three per cent dividends on the \$65,372,155 of stock."

If all this be so, the query still remains: What has happened that should diminish public confidence in the securities? Two things have happened which are calculated to shake that confidence:

(1.) The Chicago, Burlington and Quincy Railroad Company has completed an independent line between Chicago and Denver. As a corollary to that, the Denver and Rio Grande (narrow gauge) is just about completing a line between Denver and Salt Lake City. The two latter together virtually parallel the entire length of the Union Pacific main line, and connect at Salt Lake with the Central Pacific, and might be used to divert through business from it. To do this effectually, it would be necessary to widen the track of the road between Denver and Ogden. But this is not a difficult matter; and, in the meantime, it would be possible, by cutting down the rates, to divert considerable business, as the change of gauge would hardly affect passenger traffic, and a change of trucks could be improvised, as is done on some eastern roads.

It is manifest that the days of the Union Pacific monopoly are passing away; and notwithstanding Mr. DILLON's confident show of earnings, the Union Pacific, while it may still remain a valuable property, is so encumbered with debt, and so hampered by competitors, that it is difficult to see how its former position can be regained.

(2.) The other cause relates to the internal organization and management of the company. A morning newspaper calls attention to the fact that in 1880, and former years, the Union Pacific was operated at an expense of about 40 per cent of its gross earnings—a ratio lower than that of any other considerable road in the country; due, in part, to the high rates obtained, and in part to the relatively low fixed charges. The company went through the forms of consolidation with the Kansas Pacific and Denver Pacific railroads; thereby enlarging the capital of the company about \$14,000,000, and the bonded debt about \$35,000,000, without a corresponding increase in the gross earnings of the combined lines. It is true that the Kansas Pacific had been a sort of thorn in the side of

the Union Pacific for some years, as a competitor for the profitable Colorado business, and because under the Pacific Railroad Acts it had the right to connect and do through business on equal terms with the main line.

A system of deliberate "freezing out" seems to have been practiced upon the holders of Kansas Pacific securities. In 1878 its stock was selling below 10 cents on the dollar, and much of it changed hands at 5, while its Income bonds ranged at about 15, and its Second Land Grant bonds at about 35. There is a suspicion that before the consolidation was made the great bulk of the stock and junior bonds of the Kansas Pacific Company passed into the hands of parties interested in the Union Pacific, and that virtually this injection of stock and bonds into the consolidated company netted a profit of somewhere from \$25,000,000 to \$30,000,000 to the managers for the time being of the parent company.

Only a year later \$10,000,000 of additional Union Pacific stock were issued, ostensibly to pay floating debt, but to what uses the proceeds of that stock were ever put no one can say with confidence. Both of these additions to the burden of the Union Pacific fixed charges have contributed to destroy the repose which investors had in the integrity of the managers.

From the start, under the Credit Mobilier Ring, the company seems to have been unfortunate in its *personnel* (the honorable gentlemen at present in charge always excepted). There is a feeling, also, that its numerous branch lines into Colorado, and its Oregon Trans-Continental branch line into Oregon are parts of a mistaken policy; and that however flattering the show of earnings, made in good part by carrying construction material, may appear, the prosperity is transient, and that a reaction may be looked for in future.

Just how far those who were once heavy stockholders, but who disposed of their holdings at large figures, are now "bearing" the stock to get it back forty or fifty points lower cannot be made matter of proof; but it is a real misfortune to any company to have for its directors habitués of Wall street, who can, by Stock Exchange devices, make more money from the fluctuations in the value of the securities than they can from ministering to the business of the road.

THE annual report of the Custom House at New York shows the tonnage receipts for 1882 to be 1,346,045, divided among 6,327 sailing vessels and 951 steam vessels. Of the sailing vessels, 1,904 were American, 2,461 British, 611 Norwegian, 339 German and 261 Italian. Of the steam vessels, America had 162, Great Britain 643, Germany 47 and Italy 7.

### Electricity as a Motive Power.

BY W. L. SILVEY.

It has been said that in the line of electricity the world moves with giant strides, yet when we take a sober second view, it is really astonishing to see the little real advance made in the last twenty years. Electric light is older than gas light. Sir Humphrey Davy exhibited the electric arc in London while the streets were still dimly lighted by oil, gas being yet an almost untried experiment, and his light—a veritable electric sun four inches long—was so powerful as to throw our modern electric lights of one-eighth to one-half inch in length, entirely in the shade. The progress of electric lighting has been a series of spasmodic leaps backwards as well as forwards, the only real progress made in the last thirty years being the improved machines for generating electricity. As an example of the backward movement, I might mention what the newspapers have recently given as the inventions of Mr. Edison, that is, the use of an incandescent wire, or sheet of platinum or iridium, or a thread of carbon (of which the Swan and other modern rivals are simply modifications) inclosed in a vacuum. As a matter of fact the vacuum was used by Davy nearly a century ago, while as to the other parts—that is carbon thread platinum wire, etc.—they were used way back in the "forties" in connection with King's Patent Electric Light, the inventor of which was in reality an American named Star, who died before his inventions were all completed. As to our electric generators, on which so much inventive ingenuity has been expended, little progress has been made since the days of Faraday. In fact, when Henry in 1830 made the first compound electromagnet, and Faraday, in 1831, succeeded in luring an electric spark from a coil of wire surrounding a piece of iron, the first grand fundamental principle had been discovered, all our modern dynamo or magneto machines being only able to do the same thing in a more perfect way.

The inventions of Brush, Edison and others are only capable of giving a larger and more powerful current for a less expenditure of power than the numerous inventions which preceded them. It is no wonder that electric light is now so common and successful, when experimented with and backed by the best inventive talent, assisted by the example of inventors and discoverers for nearly one hundred years. Immediately after the discovery of the electro magnet by Henry, and the discovery of its prodigious lifting power when its coils were circulated by an electric current, inventors began to look in that direction for a motive power for the future, and in a short time Jacobi was navigating the Neva in a boat driven by electricity; but the great impediment in his way, as with all others until recently, was the great cost of supplying sufficient battery power, which made the electric motor more expensive than steam motors. With the recent advance made in producing large, powerful electric currents the old expensive battery could be practically discarded, while the electro motor is free to move. In fact it will soon be a power-

ful rival to steam, owing to its greater safety, the possibility of supplying power to cities from a central station, or to transmit power to upper rooms of high buildings for running printing-presses, etc., hitherto inaccessible to steam power, and the possibility of utilizing the power of falls, rapids, tides and rivers for driving our ponderous mine and factory machinery. It is now possible to take up the power of wind and water and convey it to wherever it may be needed, which makes the electric motor no longer a pigmy but a powerful rival if not an overpowering opponent to steam. Since the recent improvements which make the storage battery practical, currents may be stored for future use, or when turned on our electro motors may be made to give out more power than if worked continuously. Electricity is undoubtedly the future motor, for it can turn our mills and factories, drive our cars, crush our quartz and ores, refine our metals, in fact do man's hard work more perfectly than any steam mechanism. The future value of electricity is rated so high by clear-headed men that so good a servant as steam has been sinks, by comparison, into insignificance. Nothing can be more probable than that coal will be burned at the shaft, the power to be transmitted to cities over a wire, instead of the expensive way of hauling coal to our factories as now universally employed. Instead of putting steam-engines at our mines for compressing air, etc., the near future will see us utilizing the power of mountain streams for driving generators, the power conveyed to the mines by a wire, there to be reconverted into power by electric motors, thus stopping the practice of hauling coal to the engines, an expensive and unnecessary practice which necessitates the building of expensive roads sometimes many miles over the mountains. Electric power is so easily transmitted many miles over a wire that the man who will employ it first in a commercial or general way will be truly a public benefactor. All that is now needed is the co-operation of capital with inventive talent to make the transmission of electrical power a sure and paying investment. CASTLETON, IND., Jan. 25, 1883.

A STEAM bark was recently to be seen in the East River, at the foot of Wall street, New York City. She takes a general cargo for Oregon. Her name is the "George S. Homer" and she is a sister ship of the bark Mendoza, but larger. She was built at Bath, Me. Her dimensions are 214 feet long on deck, 204 feet on the keel, 39 6-10 feet beam, 20 9-10 in depth of hold, and 1,174 tons register. She has a regular marine engine and Scotch boilers. She carries her boilers in a house on deck. The George S. Homer is full bark rigged, and will use her auxiliary steam power only in case of necessity. The fact is interesting that for several years steam has been used as an auxiliary propelling power by whalers in the Pacific, and shipping men along the coast think well of the principle. A schooner named "Louis Bucki" in the Southern lumber trade, is also fitted with light auxiliary steam power.

MOONLIGHT, like charity or a lawyer's wig, covers a multitude of sins.



## Interlocking Switch and Signal Apparatus.

### EXPLANATION AND DESCRIPTION OF INTERLOCKING APPARATUS.

[Continued from page 79.]

THE first point in arranging a yard on the interlocking system, is to concentrate as much as possible all the switches, so that one machine and one man can actuate as great a number as possible. It is found that one man can work a machine of fifty levers almost as readily as one

sible; or in such position as may be most convenient for shifting operations.

The signal cabin should be constructed with a purpose of giving the switchman as good a view of the tracks and switches as possible. The sashes should reach from about twelve inches above the floor line to a height above the switchmen's line of vision, and have no more timber in mountings or corner posts than is absolutely necessary. Diagrams showing the yard and arrangement of switches and signals should be placed in the cabin, not only for convenience in testing the interlocking, but for the as-

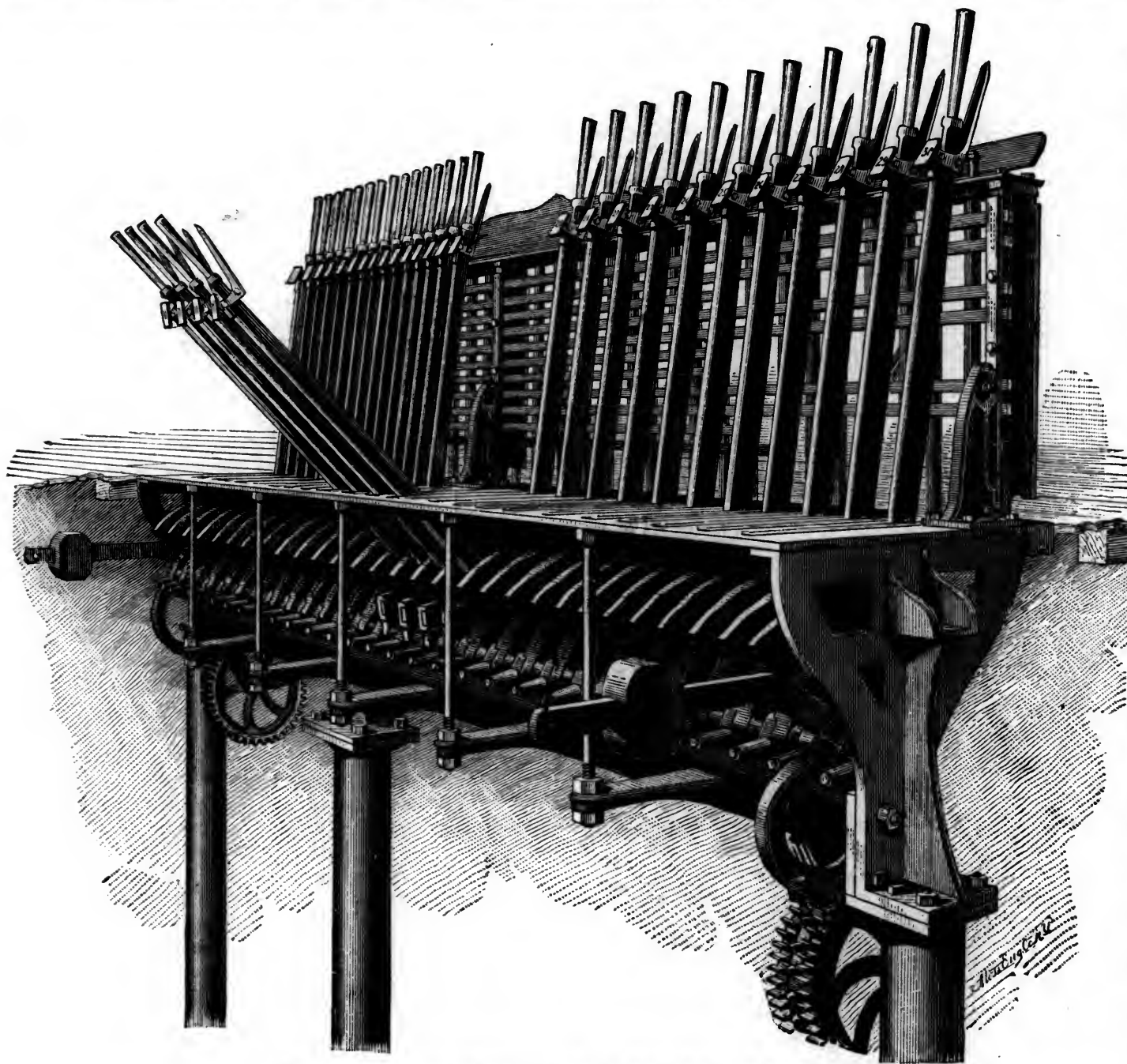
portions of the floor, in order to show more distinctly the general construction). Any required number of hand levers can be arranged in frames of the same construction.

A name plate is fixed on the upright frame of the locking mechanism, behind the hand levers, and gives a description of the work each lever has to perform. In addition to the number belonging to each lever, there is placed immediately below it, where necessary, the number or numbers of levers that precede the one to which they are attached. This arrangement greatly assists the switchman in learning the

various combinations of levers they are to work.

On the ground level, with the foundations of the cabin, are erected permanent foundations for the columns, so that the lever frame may be solidly supported without aid of the cabin building itself. The lower girt of the frame is placed near the ground level, and is utilized as a support and fulcrum for the bell cranks which connect the rods which lead from the switches, locks and signals with the hand lever connections.

The upper girt of the frame is a short distance below the floor-plate, and serves as a support and fulcrum for the hand levers. The pivots of the hand levers are arranged in line, and while each pivot is permanently secured, any pivot can be readily removed, and a hand lever can be taken out whenever necessary for changes. The hand levers extend through slots in the



FRONT VIEW OF LEVER FRAME.

of twenty levers, hence the importance of concentrating the switches. It is very generally supposed that the system of interlocking causes delay to traffic by taking longer to perform shifting operations; but it is found by experience in England, that much more work can be got through by a smaller number of men with the interlocking than without it, provided that the yards are reasonably well laid out and that they are properly signalled. The elevated cabin for the levers should be located with care, so that it may be utilized to work as many switches connected with the main track as pos-

sible; or in such position as may be most convenient for shifting operations.

#### HAND LEVER FRAME.

The Hand Lever Frame of the Cummings Patent System is constructed entirely of iron, and consists essentially of two or more strong columns, two cross-girts, end-plates, floor-plates, the hand levers, and the locking mechanism. In the views accompanying are shown a hand lever frame of thirty hand levers (drawn from the one used at Union Junction, Wilmington), as it appears in the cabin (leaving out the connections from the levers, and

floor-plate by which they are guided, and terminate with a handle of convenient shape.

#### SPRING CATCH LEVER.

Each hand lever carries a spring catch to secure the lever at the end of the stroke. The spring catch slides on the hand lever below the floor-plates, and is operated by means of a small catch lever fixed on the hand lever, and a sliding rod which extends down to the spring catch. On the underside of the floor-plate, on each side of the slot, there are arc-shaped flanges, which guide the spring catch while the lever is being moved, and when the hand lever reaches the end of its stroke in either direction, the catch springs past the ends of the arc-shaped flanges and prevents any movement

of the hand lever until the small catch lever has been operated. The spring catch of each lever carries on one side two friction rollers (visible in the rear view of the hand lever frame, beneath the floor-plate); and a segment lever, formed solid from a simple bar of iron, and pivoted about its center, extends between the friction rollers in such a manner that any movement of the spring catch will necessarily move one end of the segment lever, either up or down. Each segment lever is connected to the locking mechanism (in the upright frame behind the levers) so that every movement of the segment lever imparts motion to a portion of the locking mechanism. Thus, to move any particular hand lever, it is requisite that the parts of the locking mechanism stand in such relation to each other that the locking mechanism presents no impediment to the movement of such parts connected with that particular hand lever.

In this way the spring catch becomes not only the recipient of the locking, but also the actuator of the locking; and as a consequence it may well be said that the intention of a switchman to move a lever, expressed by his grasping the lever and so moving the spring catch, independently of his putting his intention in force, actuates all the necessary locking.

#### LOCKING MECHANISM.

By placing the locking mechanism behind the levers, in an upright frame, and the catches and segment levers under the floor-plate, the mechanism for operating the interlocking devices is thus placed out of the way of the feet, and removed from the grit and dirt that would work into and injure the working parts if above the floor plate; also the switchman has a level standing place with nothing to prevent free access to the levers. The locking mechanism consists of a series of vertical locking bars and horizontal sliding bars in an upright frame. The number of vertical bars will be same as the number of levers in the frame. The number of horizontal sliding bars will be in proportion to the number of combinations required in the apparatus. The horizontal sliding bars are placed at a sufficient distance from the locking bars to allow the use of projecting stops on both kinds of bars; and said stops being properly placed when the mechanism is constructed, the position of certain horizontal sliding bars will always control certain levers. The horizontal locking bars are actuated by the vertical locking bars by means of pieces with a diagonal slot fixed on the vertical locking bars, and diamond shaped pieces on the horizontal sliding bar so arranged that the vertical movement of the locking bar will cause a horizontal movement of the sliding bar. If necessary the movement of one vertical locking bar may cause the movement of several horizontal sliding bars, and in either direction.

The system we are describing also contemplates the use of a variety of combination locks and special locks for controlling the levers in any intricate combinations, (described in our letters patent) too tedious to describe here, and

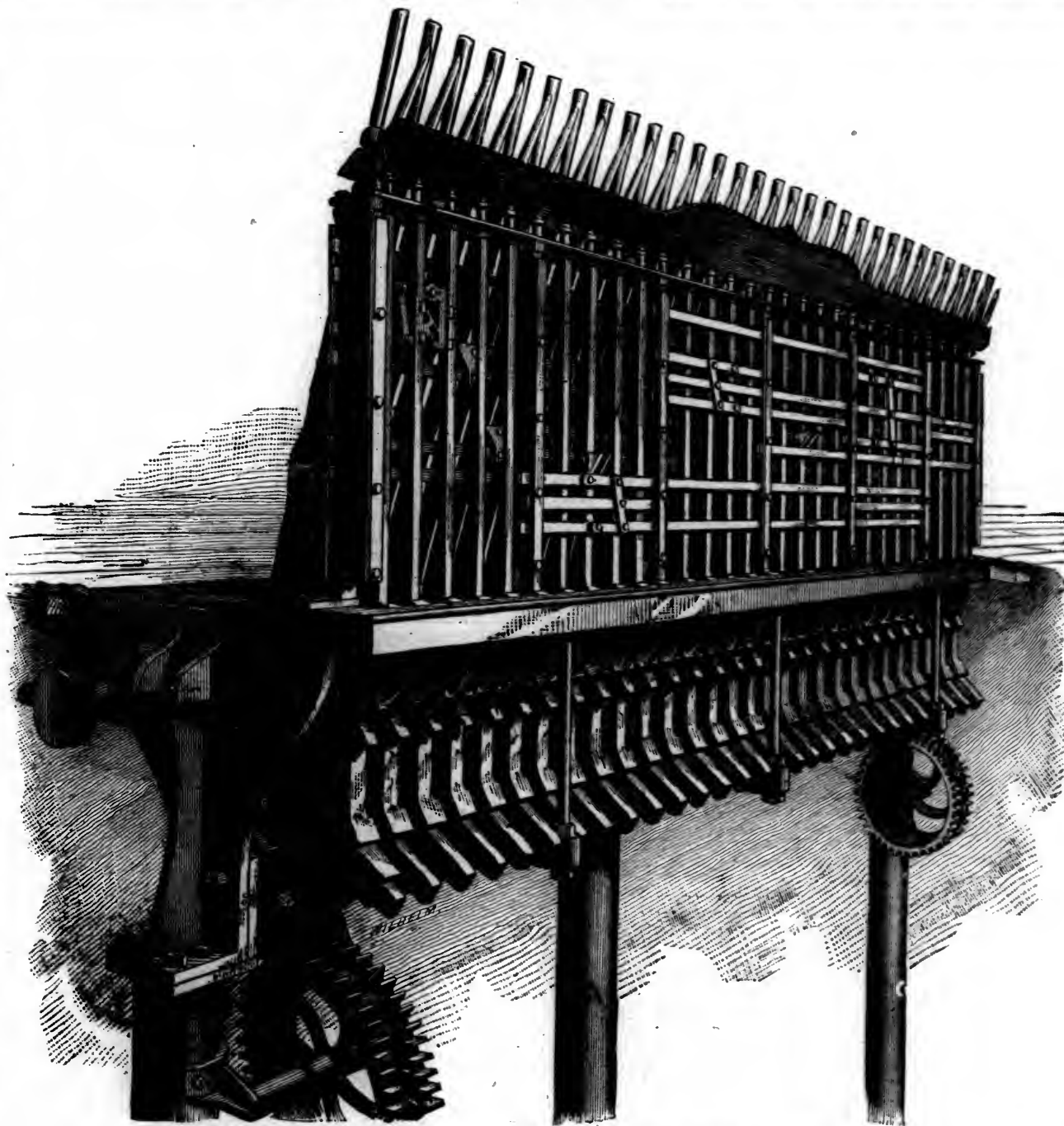
by the use of these combinations and special locks, some of which are shown in the rear view of the lever frame, great saving in cost of apparatus may sometimes be effected, and the apparatus rendered more practicable and simple in operation.

#### OPERATION OF THE LOCKING MECHANISM.

When a hand lever is in its normal position, i. e., nearest the front of the frame, the spring catch being drawn up past the end of the arc, the vertical locking bar and the front end of the segment lever belonging to said hand lever are in their uppermost position. Up-

past the end of the arc, and carrying up also the back end of the segment lever, the front end of the segment lever is depressed and the vertical locking bar and the horizontal sliding bar complete their movement. The completion of this movement may lock still more levers, and may release others, according to the combination and arrangement of the respective stops.

If a hand lever be left standing in mid stroke or in any position short of a complete throw, and an effort be made to move the other hand levers with which this lever has been interlocked, or even to move the catch levers on



REAR VIEW OF LEVER FRAME.

on grasping the catch lever and moving the catch out of engagement with the arc, the front end of the segment lever with its vertical locking bar is depressed until the segment lever stands in a position radial to the center or axis on which the hand lever moves. The movement of the segment lever and its vertical locking bar, also moves the horizontal sliding bar sufficient to bring the stops on it under the stops on other vertical bars and thus holds the levers belonging to them.

As the spring catch can move only at the ends of the arc, it follows that the segment lever is not moved during the stroke of the hand lever, because the segment lever stands in a position radial to the axis of the hand lever; when, however, the hand lever is over, and the spring catch is let go, it moves upward

them, such an effort would fail, as the stops on the respective vertical and horizontal bars would engage and prevent any movement of them until the hand lever has completed its stroke, and force applied to either lever will not produce any effect to facilitate a movement.

It will be seen that a switchman cannot even commence to make any movement, of either switch or signal, until he has efficiently locked in their proper positions all switches and signals that have any relation to the movement which he intends to make, and that, until he has thoroughly completed the intended movement, and has ceased to meddle with the part of the apparatus which actually sets the switches or signals in motion, all switches or signals affecting the operation which he is performing must be securely locked.

[TO BE CONTINUED].



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Jan. 30.

	W. 24.	Th. 25.	F. 26.	Sat. 27.	M. 29.	Tu. 30.
Adams Express.....	134 1/2	135				
Albany and Susq.....						
1st mortgage.....						
2d mortgage.....	106	106 1/2				
American Express..	92	91 1/2	92	91 1/2	91	
Burl. C. R. & Nor..	82		83		83 1/2	
1st mortgage 5s..	101	100 1/2	101	101	100 1/2	101
Canada Southern ..	70	70	69 1/2	69 1/2	70 1/2	69
1st mortgage guar	95 1/2	95 1/2			95 1/2	95 1/2
Central of N. Jersey	72 1/2	72 1/2	71 1/2	71 1/2	72 1/2	72 1/2
1st mort. 1890....		117				
7s, consol. ass....	110 1/2					
7s, convertible ass.		111	111	110 1/2	110 1/2	
7s, Income.....						
Adjustment.....			106 1/2	105 1/2	106 1/2	
Central Pacific.....	83 1/2	83 1/2	83 1/2	83 1/2	84	83 1/2
6s, gold.....	113 1/2	113 1/2			114 1/2	
1st M. (San Joa.)	109 1/2					
1st M. (Cal. & Or.)					103	
Land grant 6s....					105 1/2	
Chesapeake & Ohio.	23 1/2		23 1/2	23		
1st pref.....	33 1/2	33 1/2	33 1/2	32 1/2		
2d pref.....	26 1/2		25 1/2			
1st mort., series B	91		91	91	91	
Chicago and Alton.	136	136	136			
Preferred.....						
1st mortgage.....			117			
Sinking Fund.....	114 1/2		114	114		
Chi., Bur. & Quincy	123	123 1/2	122 1/2	122 1/2	123 1/2	123 1/2
7s, Consol. 1903..	127	127 1/2	126 1/2	127	126 1/2	126 1/2
Chi., Mil. & St. Paul	106 1/2	106 1/2	105 1/2	106	106 1/2	106 1/2
Preferred.....	120	120 1/2	120 1/2	120	120 1/2	120 1/2
1st mortgage, 8s..						
2d mort., 7 3/10s..	126		126 1/2	126 1/2		
7s, gold.....						
1st M. (La. C. div.)			113 1/2			
1st M. I. & M. div.)	122	122 1/2				
1st M. (I. & D. ext.)			122 1/2			
1st M. (H. & D. div.)	115 1/2	116 1/2	117		118	117 1/2
1st M. (C. & M. div.)	126					
Consolidated S. F.				124		
Chi. & Northwestern	133 1/2	132 1/2	132 1/2	131 1/2	132 1/2	131 1/2
Preferred.....	147	146 1/2		146	146 1/2	146
1st mortgage.....			109 1/2	110		
Sinking Fund 6s..			134			
Consolidated 7s..						125 1/2
Consol. Gold bo'ds						
Do. reg.....						
Chi., R. Isl. & Pac.	123 1/2	123 1/2	124	123 1/2	124	123 1/2
6s, 1917, c.....	124		124	124		
Clev., Col., Cin. & Ind.		78 1/2	78	77 1/2		80
1st mortgage.....						
Clev. & Pittsburg gr.			142			
7s, Consolidated.						125 1/2
4th mortgage.....			110 1/2			
Col., Chi. & Ind. Cent	4	4				
1st mortgage.....						
2d mortgage.....						
Del. & Hud. Canal.	107 1/2	108 1/2	108	107 1/2	107 1/2	107 1/2
Reg. 7s, 1891....					114 1/2	114 1/2
Reg. 7s, 1884....						
7s, 1894.....						
Del., Lack. & Western	126 1/2	126 1/2	125 1/2	126	126	125 1/2
2d mortgage 7s..						
Consol. 1907....		127				
Erie Railway.....						
1st mortgage.....			127			
2d mort. 5s, ext..						
3d mortgage.....						
4th mort. 5s, ext..						
5th mortgage.....						
7s, Consol. gold..			130 1/2		129 1/2	
Great West. 1st mort			110			
2d mortgage.....	100					
Hannibal & St. Jo..		42 1/2	44 1/2		42 1/2	42 1/2
Preferred.....	81	82	83	82 1/2	84	85
8s, Convertible....						
Houston & Tex. Cen		75				
1st mortgage.....		108 1/2				
2d mortgage.....						
Illinois Central....	145	145 1/2	145 1/2	146	145 1/2	146 1/2
Lake Shore & Mich So	111	110 1/2	110 1/2	110 1/2	111 1/2	110 1/2
Consol. 7s.....	129					
Consol. 7s, reg..					125 1/2	
2d Consolidated..	120 1/2					
Lah. & W. B. con. ass	104 1/2		104 1/2	104	103 1/2	
Long Dock bonds..						
Louisville & Nash.	55 1/2	55 1/2	55 1/2	55 1/2	57 1/2	57
7s, Consol. reg..						
Manhattan.....		47 1/2			48 1/2	50
1st pref.....		87				
Met. Elevated.....		82	80			81
1st mortgage.....	93 1/2	98 1/2	98 1/2	98 1/2	98 1/2	98
Michigan Central	98 1/2	97 1/2	97 1/2	97 1/2	98 1/2	97 1/2
7s, 1902.....		125 1/2	125	124 1/2	125	
Morris & Essex....			123 1/2	122 1/2	122 1/2	
1st mortgage.....						

2d mortgage.....						
7s of 1871.....					121 1/2	
7s, Convertible....						
7s, Consolidated ..	122 1/2	122 1/2	122 1/2		122 1/2	
N.Y. Cen. & Hud. R.	127 1/2	127 1/2	126 1/2	126 1/2	127 1/2	126 1/2
6s, S. F., 1883....			101 1/2			
6s, S. F., 1887....						
1st mortgage.....			130			
1st mortgage, reg.			130			
N. Y. Elevated.....					101	
1st mortgage.....			115 1/2		115 1/2	116
N. Y. & Harlem....					200	
Preferred.....						
1st mortgage.....			130	130 1/2		
1st mortgage, reg				130 1/2		
N. Y. Lake Erie & W	39 1/2	39 1/2	38 1/2	38 1/2	39 1/2	39 1/2
Preferred.....						84 1/2
2d Consolidated..	96 1/2	97	96 1/2	96 1/2	99 1/2	97
New 2d 5s fund..	96					
N.Y., N. Hav. & Hart		170	170	170		
North Mo. 1st mort		119	119			
Northern Pacific....	48 1/2	49	48 1/2	49	49 1/2	49 1/2
Preferred.....	84 1/2	85 1/2	84 1/2	84 1/2	85 1/2	85
Ohio & Mississippi.	32 1/2		32 1/2	31 1/2		
Preferred.....						
2d mortgage.....						
Consolidated 7s..	116 1/2					
Consol. S. Fund....						
Pacific Mail S. S. Co	39 1/2	39 1/2	40	39 1/2	40 1/2	41 1/2
Pacific R. R. of Mo.						
1st mortgage.....						
2d mortgage.....						
Panama.....						
Phila. & Reading..	55	55 1/2	55 1/2	55 1/2	56	55
Pitts., Ft. W. & Chi. gtd			136 1/2		136	
1st mortgage.....						
2d mortgage.....						133
3d mortgage.....						
Pullman Palace Car	125	124 1/2		124 1/2		124 1/2
Quicksil'r Min'g Co						
Preferred.....		37 1/2		38 1/2		
St. Louis & San Fran	33				33 1/2	33 1/2
Preferred.....	52	51 1/2	52	50 1/2	51 1/2	52
1st Preferred.....				93		
St. L., Alt'n & T. H.	56	59	60	62	68	68
Preferred.....	95	97 1/2	99	99 1/2	100	100
1st mortgage.....						
2d mort. pref.....			111 1/2			
Income bonds.....						
St. L., Iron Mt. & S.						
1st mortgage.....		117			117	
2d mortgage.....		107 1/2	108	109	108	
Toledo and Wabash.	107 1/2					
1st mortgage.....						
2d mortgage.....	100 1/2	100 1/2		100 1/2		
7s, Consolidated..						
St. Louis Division	105	105	105			
Union Pacific.....	101 1/2	101 1/2	98 1/2	99 1/2	99 1/2	99 1/2
1st mortgage.....	113 1/2	114		113 1/2	113 1/2	
Land Grant 7s..		110 1/2				
Sinking Fund 8s..			119 1/2			
United States Ex....						
Wabash, St. L. & Pac	33 1/2	33 1/2	32 1/2	32 1/2	33 1/2	33
Preferred.....	54 1/2	54 1/2	54	54	54 1/2	53 1/2
New mort. 7s..						
Wells-Fargo Ex....						124 1/2
Western Pacific b'ds						
Western Union Tel.	82 1/2	82	81 1/2	82	82 1/2	82
7s., S.F. conv., 1900						

## Boston Stock Exchange.

Closing Prices for the Week Ending Jan. 30.

	W. 24.	Th. 25.	F. 26.	Sat. 27.	M. 29.	Tu. 30.
Atch., Top. & San. Fe.	84	83 1/2	83 1/2	83 1/2	83 1/2	83
1st mortgage.....	121 1/2			121		
Land Grant 7s....				113 1/2		
Boston & Albany...	174	174 1/2	174	173 1/2	173 1/2	174
Boston and Lowell.	100	100 1/2	100			
Boston & Maine....				150	152	
Boston & Providence						
Bos'n, Hart. & Erie 7s						
Burl. & Mo. R. L. G. 7s		115 1/2	116			
Burl. & Mo. R. in Neb						
6s, exempt.....						
4s.....						
Chi., Burl. & Quincy	122 1/2	123 1/2	123 1/2	123	123	123
Cin., Sand. & Clev (\$50)					24	
Concorc (\$50).....						
Connecticut River..						
Eastern.....	41	41	41	41		40
New 6s, Bond....	109 1/2	110	110 1/2			110

Fitchburg.....	121	120	120	119 1/2	118	
N.Y. & New England	48 1/2	48 1/2	48 1/2	48	48 1/2	
7s.....			115 1/2			
Northern N. H.....						
Norwich & Worcester						
Ogden & Lake Cham						
Old Colony.....	137	137		137	137	137 1/2
Ph., Wil. & Balt. (\$50).						
Portl'd, Saco & Ports			112 1/2		112 1/2	
Pueblo & Ark Val 7s		113 1/2				
Pullman Palace Car	125 1/2	125 1/2			125 1/2	
Union Pacific.....	102 1/2	101 1/2	99 1/2	99	99 1/2	99
6s.....		116 1/2		113 1/2	113	113
Land Grant 7s....						
Sinking Fund 8s..		116 1/2	116 1/2		116 1/2	116 1/2
Vermont & Mass....						130 1/2
Worcester & Nashua					58	
Cambridge (Horse)..						
Metropolitan (Horse)		73 1/2	73		73	73
Middlesex (Horse)..						
Cal. & Hecla Min'g Co		247		246	245	
Quincy.....	59	60	53 1/2	52	51 1/2	51 1/2

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Jan. 30.

	W.24.	Th.25.	F.26.	Sat.27.	M.29.	Tu.30.
Allegh'y Val. 7 3/10s	.....	.....	122 3/4	.....	.....	.....
7s, Income.....	.....	.....	.....	.....	49 1/4	.....
Buff., Pitts & West.	18	18 1/2	18 1/2	18 1/4	18 1/4	18 1/4
Camd'n & Am. 6s, '83	.....	.....	.....	.....	.....	.....
6s, 1889.....	.....	.....	.....	.....	.....	.....
Mort. 6s, 1889.....	.....	.....	113	.....	.....	112 3/4
Camden & Atlantic.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Catawissa.....	23 1/2	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
2d pref.....	.....	.....	.....	.....	.....	.....
7s, new.....	.....	.....	.....	.....	.....	122
Del. & Bound Brook	.....	.....	.....	.....	.....	.....
7s.....	.....	.....	.....	.....	.....	.....
Elmira & Williamspt	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	58 3/4	.....	.....	.....
Hunt. & B. Top Mt.	.....	.....	.....	.....	.....	.....
Preferred.....	30	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Lehigh Navigation.	39 1/4	39 3/4	39 1/4	39 3/4	.....	39 1/4
6s, 1884.....	.....	103	103	.....	.....	102 3/4
Gold Loan.....	.....	110 1/2	.....	110 1/2	110 1/2	111
Railroad Loan.....	.....	116 1/4	.....	.....	.....	.....
Conv. Gold Loan.....	.....	.....	.....	.....	.....	.....
Consol. Mort. 7s.	116 1/4	116 1/4	.....	.....	.....	.....
Lehigh Valley.....	64 1/2	64 1/2	65 1/2	65 1/2	65 1/2	65 1/2
1st mort. 6s, coup	.....	.....	.....	.....	.....	.....
1st mort. 6s, reg..	.....	.....	.....	.....	.....	.....
2d mort. 7s.....	.....	.....	.....	.....	.....	.....
Consol mort. 6s..	.....	.....	.....	.....	.....	.....
Consol.mtg.6s,reg	.....	.....	120 1/2	.....	.....	.....
Little Schuylkill.....	.....	.....	58	53 1/4	.....	.....
Minehill & Sch. Hav'n	.....	.....	.....	.....	.....	.....
North Pennsylvania	66	.....	.....	.....	67	67
1st mortgage 6s..	.....	.....	.....	.....	.....	102 1/2
2d mortgage 7s..	120	.....	.....	.....	.....	.....
Genl. mtg.7s,coup	.....	.....	.....	.....	.....	.....
Genl. mtg. 7s, reg	.....	.....	.....	.....	.....	.....
Northern Central.....	.....	55 1/2	55 1/2	55 1/2	.....	.....
5s.....	99 1/2	.....	99 1/2	99 1/2	99 1/2	99 1/2
Northern Pacific...	48 1/2	49	49	48 1/2	49 1/2	49 1/2
Preferred.....	84 1/2	85 1/2	85	84 1/2	85	85 1/2
Pennsylvania R. R.	60 1/2	60 1/4	60 1/2	60 1/2	60 1/4	60 1/2
1st mortgage.....	.....	.....	.....	.....	.....	.....
Gen'l mort.....	.....	.....	.....	.....	122 1/2	.....
Gen'l mort reg.....	.....	.....	.....	.....	.....	125
Consol. mort. 6s.	116 1/2	.....	.....	.....	.....	.....
Consol. mort. reg	.....	.....	.....	117 1/2	.....	.....
Pa. State 5s, new...	.....	.....	117	.....	.....	.....
do 4s, new.....	.....	.....	.....	.....	.....	.....
do 3 1/2s, 1912...	.....	.....	.....	.....	.....	.....
Phila. & Reading.....	27 1/2	27 1/2	27 1/2	27 1/2	27 1/2	28 1/2
1st mortgage 6s..	.....	.....	.....	.....	.....	.....
7s of 1893.....	.....	.....	.....	.....	.....	.....
7s, new convert..	.....	.....	.....	.....	76	75
Consol. mort. 7s..	.....	.....	.....	.....	125	.....
Consol. mort. reg.	.....	.....	.....	.....	.....	.....
Gen'l mort. 6s.....	94 1/2	94 1/2	94 1/2	94 1/2	94 1/2	94 1/2
Def.Income bonds	.....	.....	.....	.....	.....	.....
Philadelphia & Erie	.....	.....	.....	.....	.....	.....
1st mortgage 5s..	103 1/2	.....	103 1/2	103 1/2	104	.....
2d mortgage 7s..	111 1/4	.....	.....	112	.....	.....
Pittsb., Cin.&St.L.7s	.....	.....	.....	.....	.....	.....
Pitts.,Tit.&Buff. 7s.	97	98 1/2	.....	98	.....	98 1/2
Schuylkill Navi't'n.	.....	.....	.....	.....	.....	.....
Preferred.....	13 1/2	.....	.....	.....	.....	13 1/2
6s, 1897.....	.....	.....	.....	.....	.....	.....
6s, 1907.....	.....	.....	.....	89 1/2	.....	.....
United Co. of N. J..	188 1/2	.....	188 1/2	188 1/2	188 1/2	.....
Hestonville, (Horse)	.....	.....	.....	.....	.....	.....
Chestnut & Walnut.	.....	.....	.....	.....	.....	.....

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Jan. 29.

Tu.23.W.24.Th.25.F.26.Sat.27.M.29.

Baltimore & Ohio...	200					
6s, 1885.....	105					
Central Ohio (\$50)...	50					
1st mortgage.....						
Marietta & Cin. 7s.....						
1st mortgage, 7s.....						
2d mortgage, 7s.....	101	101	101 1/2	101 1/2	101 1/2	101 1/2
3d mortgage, 8s.....	54 1/2	54 1/2	55	55	55	55
Northern Cen. (\$50)...	55 1/2	54 1/2	55 1/2	55 1/2	55	55
2d mort. 6s, 1885.....	103 1/2				103	
3d mort. 6s, 1900.....	54 1/2					
6s, 1900, gold.....	114 1/2				114 1/2	
6s, 1904, gold.....	113				113	
Pitts. & Connells. 7s.....	120 1/2					
Virginia 6s Consol.....	55	54 1/2	53			
Consol. coupons.....	54	53				
10-40 bonds.....	40 1/2	40 1/2	40 1/2	40	39	
Def'd Certificates.....						
New 3s.....	48 1/2	49	49 1/2	49 1/2		
Western Maryland.....						
1st M., end. by Balt.....						
2d M., do.....						
3d M., do.....						
1st M., unendorsed.....	112	111		109 1/2		
2d M., end. Wash Co.....						
2d M., preferred.....				110		
City Passenger R. R.....						

**London Stock Exchange.**

—Closing Prices—

Jan. 12. Jan. 5.

Baltimore and Ohio 5s, 1927.....	107	109	107	109
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	111	113	110	112
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs.....	90	91	90	91
Do. 1st mort. 6s, 1895-98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds.....	118	120	118	120
Do. Con. M. sp. c., till '83 after 6p. c.....	117	119	117	119
Illinois Central \$100 shares.....	148 1/2	146 1/2	148	149
Do. S. F. 5s, 1903.....	105	107	105	107
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s.....	94	96	93	95
Do. capital stock \$100 shares.....	56	57	55 1/2	56 1/2
N. Y. Cen. & Hud. R. mort. bonds.....	130	135	130	135
Do. \$100 shares.....	130	131	131 1/2	132 1/2
Do. mort. bonds (stg.).....	119	121	119	121
N. Y. Lake Erie & West. \$100 shs.....	40 1/2	41 1/2	41	41 1/2
Do. 6 p. c. pref. \$100 shares.....	84	86	85	87
Do. 1st Con. Mort. bonds (Erie).....	128	132	128	132
Do. do. Funded Coupon bonds.....	125	130	125	130
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. do. Funded Coupon bonds.....	97	99	97	99
N. Y., Pa. & Ohio 1st mort. bonds.....	51	52	49	50
Do. Prior Lien bonds (sterling).....	103	106	103	106
Pennsylvania \$50 shares.....	61 1/2	62 1/2	61 1/2	62 1/2
General Mortgage.....	121	123	121	123
Phil. & Erie Gen. mort. 6s, 1920.....	114	116	114	116
Philadelphia & Reading \$50 shs.....	28 1/2	28 1/2	28	28 1/2
General Consol Mortgage.....	115	117	115	117
Do. Improvement Mortgage.....	104	106	104	106
Do. Gen. Mtg. '74, ex-def'd coup.....	94	95	94	96
St. L. Bridge 1st mort. gold bond.....	122	124	122	124
Do. 1st. pref. stock.....	92	96	92	96
S. P. of Cal., 1st mort 6s, 1905-6.....	107	108	106 1/2	107 1/2
Union Pacific 1st mtg. 6s, 1896-9.....	116	118	116	118
Wabash, St. L. & P. \$100 shares.....	35 1/2	36 1/2	35 1/2	36 1/2
Do. \$100 pref shares.....	55 1/2	56 1/2	56	57
Do. gen. mort. bonds.....	81	83	81	83

**AMERICAN RAILROAD JOURNAL****Financial and Commercial Review.**

WEDNESDAY, JANUARY 31, 1883.

MONEY on call on stock collaterals was quoted during the forenoon, at  $3\frac{1}{2}$ @4 per cent. After 12:30 o'clock the rate was  $3\frac{1}{2}$  per cent, and after 2 o'clock it was 4 per cent.

The posted rates for foreign exchange were 4.83 $\frac{1}{2}$  and 4.87; the actual rates were as follows: Sixty-day bills, 4.82 $\frac{1}{2}$ @4.83; demand, 4.86@4.83; cables, 4.87@4.87 $\frac{1}{2}$ . Commercial bills were 4.81 $\frac{1}{2}$ @4.81 $\frac{1}{2}$ . Continental bills were as follows: Francs, 5.21 $\frac{1}{2}$ @5.21 $\frac{1}{2}$  and 5.18 $\frac{1}{2}$ @5.17 $\frac{1}{2}$ ; reichsmarks, 94 $\frac{1}{2}$ @ $\frac{1}{2}$  and 95 $\frac{1}{2}$ . Guilders, 39 $\frac{1}{2}$  and 40 $\frac{1}{2}$ .

The net earnings of the Philadelphia and Erie Railroad for the year 1882 were about \$1,400,000 which is more than sufficient to meet fixed charges of the company, which amount to \$1,327,355. Of the latter sum, the principal items are \$1,062,270 interest on the funded debt, \$49,249 drawback to the Allegheny Valley

Railroad and about \$46,000 State tax on the funded debt.

THE Governing Committee of the New York Stock Exchange have admitted to dealings at the Board the following securities:

Pennsylvania Company—An additional \$2,500,000 of the company's 4 $\frac{1}{2}$  per cent first mortgage gold bonds guaranteed by the Pennsylvania Railroad Company—making the total amount \$12,500,000.

Denver and Rio Grande Railway Company—An additional \$1,223,000 of consolidated mortgage bonds. These bonds are dated January 1, 1880, thirty years to run at seven per cent.

Bradford, Bordell and Kinzlea Railroad Company—First mortgage 6 per cent bonds, due June 1, 1932, for \$500,000, and 5,000 shares of stock of the par value of \$100—\$500,000 were directed to be placed on the free list. This road has nearly 41 miles completed and in operation, and the net earnings for the six months ending June 30, 1882, were \$18,031.73.

Missouri, Kansas and Texas Railroad Company—An additional issue of \$903,000 of general consolidated mortgage 6 per cent bonds.

Galveston, Harrisburg and San Antonio Railroad Company—First mortgage 5 per cent gold bonds, due May 1, 1931, \$13,500, and second mortgage 6 per cent bonds, due July 1, 1931, \$6,750,000, Mexican and Pacific Extension, respectively. These two classes of bonds, together with the 4,800 first mortgage bonds and 1,000 second mortgage bonds, secured by a mortgage upon the road east of San Antonio, already placed upon the stock list, comprise the whole bonded debt of the company, amounting in the aggregate to \$26,050,000, upon 931 miles of road, all of which was completed and in earning operation on Jan. 15.

Oregon and Transcontinental Company—First mortgage trust 6 per cent sinking fund bonds, dated November 1, 1882, due November 1, 1922, \$6,000,000. These bonds are a direct obligation of this company, additionally secured by a deposit with the Trustee of an equal amount of bonds of the following named railroad companies (branches of the Northern Pacific Railroad), issued at the rate of \$20,000 per mile of completed road: The Northern Pacific, Fergus and Black Hills Railroad Company of Minnesota (115 miles completed), \$2,300,000; Little Falls and Dakota Railroad Company (87.55 miles completed), \$1,755,000; Jamestown and Northern Railroad Company of Dakota (42.40 miles completed), \$848,000; Fargo and Southwestern Railroad Company of Dakota (54.86 miles completed), \$1,097,000.

Canadian Pacific Railway Company—\$55,000,000 capital stock in shares of \$100 each. The total amount of capital stock authorized is \$100,000,000, but the amount now listed is all that has been issued. In answer to inquiries regarding the financial ability of the company to complete the unfinished portions of the road, and its resources for that purpose, the fiscal agents in this city reply under date of January 15, 1883, as follows: "We have now completed and in operation 1,730 miles, leaving 1,576 miles yet to complete, of which the Dominion Government build at its own expense and transfers to us the portion of road from Port Moody to Kamloops, consisting of 213 miles, thus leav-

ing for the company to build 1,363 miles; the resources for which are the balance of the cash subsidy from the Government, amounting to \$17,324,112; the proceeds of land grant bonds not yet drawn from the Government, amounting to \$13,191,734; the proceeds of about 18,000,000 acres of selected land, fit for settlement, which the company will hold after retiring the balance of the existing land grant bonds, and the proceeds of the \$75,000,000 of stock remaining to be issued, of which a syndicate has just been formed to take \$30,000,000. The 1,730 miles now in operation consists partly of the road built and turned over to the company by the Government; partly of the road acquired by purchase, as stated in the official memorandum which accompanied our application, and partly of the line constructed by the company. The latter portions and the cost of the equipment of the whole line have been provided for by the company from its own capital and from the Government subsidies applicable thereto. Under the general law of Canada each railroad is authorized to pay during construction up to six per cent per annum to the stockholders on their stock. The company has paid six per cent upon the stock issued, but we propose hereafter to only pay five per cent upon the capital stock, and that is to apply to all the stock."

The aggregate amount of precious metals produced in the States and Territories west of the Missouri River, including British Columbia (and receipts in San Francisco by express from the west coast of Mexico, during 1882, as reported by Wells, Fargo & Co., shows:—Gold, \$30,193,355; silver, \$50,155,288; copper, \$4,055,037; lead, \$8,008,155—total gross result, \$92,411,835. California shows a decrease in gold of \$1,696,351. Nevada shows a total falling off of \$1,484,188, the yield from the Comstock being \$1,333,018, as against \$1,726,162 in 1881—a decrease of \$393,144. The product of Eureka district is \$3,176,656, as against \$4,127,265 in 1881—a decrease of \$953,609. Utah, Colorado, New Mexico and Arizona each show a notable increase on the products of last year. The exports of silver during the year to Japan, China, India, the Straits, etc., have been:—From Southampton, \$27,390,000; from Venice, \$9,695,000; from Marseilles, \$806,000; from San Francisco, \$5,375,000—total, \$43,266,000, as against \$27,000,000 from the same place in 1881.

The receipts of the Province of Quebec from July 1, 1882, to January 1, 1883, (including the balance of \$370,172 on hand July 1), were \$3,302,218.05; and the expenditure, \$2,827,939.45—leaving a balance January 1, 1883 of \$474,275.

In Supreme Court Chambers, this city, on the 29th inst., Judge Daniels rendered a decision upon the motion of the Union Pacific Railway Company to set aside the judgment entered by default in favor of the Credit Mobilier of America in October last for \$1,299,347.14. He decided to grant the application and set aside the judgment, because it had been irregularly entered without application to the court.

According to the message of the Mayor of Baltimore the bonded debt of that city December 31, 1882, amounted to \$36,945,691.75, being



an increase during the year of \$559,500, accounted for, however, by the issue of \$88,500 of Jones' Falls loan, \$100,000 of the repaving loan, and \$371,000 of the Western Maryland Railroad loan. There remain to be issued of loans already authorized \$2,199,500, which when issued will bring up the aggregate of the city's funded debt to \$39,145,191.23, upon a taxable basis of about \$246,000,000. The actual income of the city in 1882 is put at \$3,897,867.14, being a decrease of income as compared with 1881 of \$341,536.45. The expenses of the city government for 1882 are put at \$4,108,377.90, an increase of only \$1,930.06 as compared with those of 1881, and which, but for an increased expenditure of \$35,000 required to meet extraordinary demands upon the health department, would have been less than those of 1881 by \$33,069.94. The basis of taxation for 1882 is stated to have been \$246,234.056, less the plants of manufacturers, on which no city taxes were paid, amounting to \$574,867.

The statement of the business of all lines of the Pennsylvania Railroad east of Pittsburg and Erie for December, 1882, as compared with the same month in 1881, shows an increase in gross earnings of \$425,418, an increase in expenses of \$443,757 and a decrease in net earnings of \$18,339. The twelve months of 1882, as compared with the same period of 1881, show an increase in gross earnings of \$4,955,451, an increase in expenses of \$3,937,595 and an increase in net earnings of \$1,018,056. All lines west of Pittsburg and Erie for the twelve months of 1882 show a surplus over all liabilities of \$1,924,365, being a decrease of \$723,973 as compared with the same period of 1881.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atlantic and Pacific 1st, 95; Boston and New York Air Line pref., 80½; Buffalo, New York and Erie 1st, 1916, 130; Central Iowa 1st, 106½; Chicago, St. Paul, Minn. and Omaha, 49½; do. pref., 108½; do. consol., 108; Chicago, Burlington and Quincy, Iowa div. 48, 105½; Chesapeake and Ohio cur. 68, 54½; do. 68, 1911, 99; Chicago, Milwaukee and St. Paul, Southern Minn. div. 1st, 106½; do. Chicago and Pacific Western div. 1st, 92; do. Chicago and Pacific div. 1st, 108½; do. Mineral Point div. 1st, 91½; do. Iowa and Dakota div. 1st, 122½; do. La C. and Dav. div. 1st, 94½; Columbus, Hocking Valley and Toledo 1st, 84½; Chicago and Northwestern S. F. 58, 100½; Clev., Col., Cin. and Ind. consol., 122½; Cedar Falls and Minnesota 1st, 114; Dubuque and Sioux City, 89; Denver and Rio Grande, 48½; do. 1st, 109; do. consol., 90½; East Tenn., Va. and Ga., 9½; do. pref., 17; do. 58, 72½; do. inc., 40; Evansville and Terre Haute, 75; do. 1st, 96½; Elizabethtown, Lex. and Big Sandy 68, 94½; Fort Worth and Denver, 32½; do. 1st, 71½; Flint and Pere Marquette 1st, 112½; Gulf, Colorado and Santa Fe 1st, 111; Hannibal and St. Joseph 68, consol., 108; Houston and Texas Central genl. mort., 98½; Iowa Midland 88, 131½; Indiana, Bloomington and Western, 33; International and Gt. Northern 1st, 106; do. coupon 68, 85; Indianapolis, Decatur and Springfield 1st, 102; Kansas Pacific 1st consol., 100; do. 68, Denver div. ass., 107½; do. 68, 1896, 108; Louisville, New Albany and Chicago, 65; do. 1st, 102½; Long Island, 63; do. consol. 58, 97½; Lake Erie and Western, 30½; do. 1st, 102½; Louisville and Nashville gen'l mort. 68, 92½; do. N. O. and Mobile div. 1st, 91; Lafayette, Bloomington and Muncie 1st, 99; Lake Shore div. bonds, 121½; Manhattan, 50; Metropolitan 2d, 83; Manhattan Beach, 19; Minneapolis and St. Louis, 28; do. pref., 63½; do. 1st, 119; do. Pacific Ext 1st, 101½; do. Southwestern Ext. 1st, 110½; Missouri, Kansas and Texas, 32½; do. consol., 78, 108½; do. 2d, 56½; do. gen'l mort. 68, 83½; Missouri Pacific, 103½; do. 1st consol., 102½; do. 3d, 109; Memphis and Charleston, 45½; Milwaukee, Lake Shore and Western pref., 46½; do.

1st, 98½; Mobile and Ohio 1st, 107; do. 2d debent., 51; do. 4th debent., 34; Michigan Central consol. 58, 100½; Michigan Southern S. F., 106; New York, Chicago and St. Louis, 12½; do. pref., 31; do. 1st, 97½; Nashville, Chattanooga and St. Louis, 62½; New York, Ontario and Western, 26½; Norfolk and Western pref., 48½; do. gen'l mort., 101½; Northern Pacific 1st, 103; New Orleans Pacific 1st, 89½; Ohio Central, 12½; do. 1st, 93; Oregon Transcontinental, 86½; do. 1st, 95½; Oregon Short Line 68, 100; Ohio Southern, 12½; Oregon Railway and Nav., 136; do. 1st, 106½; Peoria, Decatur and Evansville, 26; do. Evansville div. 1st, 99; do. inc., 57½; Pennsylvania Co's 4½, 94½; Rochester and Pittsburgh, 20½; do. inc., 45; Richmond and Danville, 57; do. debent., 61; do. 1st, 94; Richmond, Danville and West Point, 28; Richmond and Alleghany 1st, 80; Rome, Watertown and Ogdensburg inc., 42½; do. ext. 58, 74; St. Paul and Duluth, 39½; do. pref., 94; St. Paul, Minn. and Man., 143½; do. 2d, 108½; do. Dakota Ext. 1st, 110; St. Louis, Alton and Terre Haute div. bonds, 80; Southern Pacific of Cal. 1st, 104½; South Pacific of Missouri 1st, 103; St. Louis, Kansas City and Northern, R. E. 78, 108½; do. Omaha div. 1st, 108½; St. Louis and Iron Mt. 58, 77½; do. Cairo and Fulton 1st, 109½; St. Louis, Jacksonville and Chicago 1st, 117; South Carolina inc., 61; St. Paul and Sioux City 1st, 113; St. Louis and San Francisco 2d, Class B, 93½; do. C. 93½; Texas and Pacific, 40½; do. inc., L. G., 59½; do. Rio Grande div. 1st, 28½; Wabash, St. Louis and Pacific, Toledo, Peoria and Western 1st, 107½; do. Cairo div. 1st, 1st, 82; Arkansas 78, L. R., P. B. & N. O., 46; do. Central, R. R., 22; do. M. O., & R. R., 45; do. L. R. & Ft. S., 58; do. M. & L. R. R., 50; Alabama, Class A, 83½; do. C, 85; Georgia 68, 1886, 106; do. 78, gold, 114; Louisiana consol., 73½; Missouri 68, 1887, 107; do. 1886, 106; North Carolina special tax, 7½; do. consol. 48, 79; Tennessee 68, old, 45½; do. compromise bonds, 46; American Cable, 67½; Mutual Union Tel., 22½; do. 68, 75; Colorado Coal and Iron, 71½; do. 68, 84; Cameron Coal, 17½; Homestake, 17½; Ontario, 35; Standard, 6.

**Boston.**—Atlantic and Pacific 68, 94; do. inc., 20; Atchison, Topeka and Santa Fe mort. 68, 102; Boston, Revere Beach and Lynn, 116; Boston Land, 6½; Boston Water Power, 3½; Boston, Clinton, Fitchburg and New Bedford, 56; Chicago, Iowa and Nebraska, 144; Connotton Valley, 3½; do. 68, 34; do. 58, 32; Chicago, Burlington and Quincy 78, 126½; do. 48, 86½; do. Denver ext. 83½; Chicago, Milwaukee and St. Paul, Dubuque div. 68, 103½; Cincinnati, Sandusky and Cleveland 78, 103; Central of Iowa, 2d pref., 26; California Southern, 9; Chicago and West Michigan, 61; Detroit, Lansing and Northern 78, 117½; Easton (N. H.) R. R., 88; Flint and Pere Marquette, 25; do. pref., 99; Iowa Falls and Sioux City, 88½; Kansas City, Fort Scott and Gulf, 82½; do. 78, 112½; Kansas City, Springfield and Memphis blocks, 101½; Louisiana and Missouri River, 11; Little Rock and Ft. Smith, 34; do. 78, 96½; Marquette, Houghton and Ontonagon, 67½; Mexican Central, 20; do. 78, 71; do. blocks No. 3, 96; Massachusetts Central, 4; Maine Central, 87½; New York and New England 68, 105½; New Mexico and Southern Pacific 78, 113½; Ogdensburg and Lake Champlain consol. 68, 95; do. inc. 35; Portsmouth, Gt. Falls and Conway, 27; Rutland pref., 19; Sonora 78, 105½; Southern Kansas and Western 78, 109½; Toledo, Delphos and Burlington, Branch inc., 12½; Toledo, Cincinnati and St. Louis, 5; Vermont and Canada, 18; Wisconsin Central, 15; do. pref., 27; Wichita and Southwestern 78, 105; Allouez Mining Co., 2½; Franklin, 14½; Napa Consol. Quicksilver, 3½; Osceola, 30; Sullivan, 1; Silver Islet, 6.

**Philadelphia.**—Am. Steamship Co. 68, 106; Belvidere Delaware 2d, 105; Buff., Pitts., do. 3d, 106; and Western pref., 24; Central Transp., 34; Chesapeake and Delaware Canal 68, 85; Huntington and Broad Top Mt. consol. 58, 89; Nesquehoning Valley, 54; Norfolk and Western pref., 49; Philadelphia, Germantown and Norristown, 106; Philadelphia City 68, 1894, 113½; do. 68, 1900, 133; Philadelphia and Reading adj. scrip. 87; do. gen'l mort. 78, 101½; do. debent. 68, 66½; do. consol. 58, second series, 60; Philadelphia, Wilmington and Baltimore 48, 93; Pennsylvania R. R. scrip., 121; Pennsylvania Canal 68, 86½; Pennsylvania and New York Canal 78, 1907, 124½; do. 1896, 121; Susq. Canal 68, 63½; Union and Titusville 78, 93; Western Pennsylvania 68, 115; West Jersey R. R. 68, 105; do. 78, 122; Warren and Franklin 78, 114. The latest quotations are: Pennsylvania State 58, new loan, 116½@

117½; do. 48, old, 110@112; do. 48, new, 112@115; Philadelphia and Reading Railroad, 27½@27½; do. consol. mort. 78, reg., 125@126; do. gen'l mort. 68, coupon, 94@95; do. 78, 1893, 120@121; do. 78, new conv., 74@76; do. gen'l mort. 78, 101@101½; do. consol. mort. 58, 1st series, 75½@95; do. 2d series, —@62½; United New Jersey R. R. and Canal, 188@189; Buffalo, Pittsburg and Western, 18@18½; Pittsburgh, Titusville and Buffalo 78, 98@98½; Camden and Amboy mort. 68, 1889, 112@112½; Pennsylvania R. R., 60½@60½; do. general mort. 68, coupon, 124@125; do. reg., 125@125½; do. consol. mort. 68, reg., 117@119; Little Schuylkill R. R., 58@59; Schuylkill Navigation pref., 13@14; do. 68, 1882, 89@90; Elmira and Williamsport pref., 58@59; do. 58, 99@100; Lehigh Coal and Navigation, 39½@39½; do. 68, 1884, 102½@103; do. R. R. loan, 115½@117; do. Gold Loan, 110½@111; do. consol. 78, reg., 116½@117; North Pennsylvania, 66½@67½; do. 68, 103@104; do. 78, 119@—; do. 78, General mort. reg., 124@—; Philadelphia and Erie, 19@21; do. 78, 112@112½; do. 58, 103½@104; Minehill 61½@62; Catawissa, 22@24; do. pref., 56@—; do. new pref., 55@—; do. 78, 1900, 121@123; Lehigh Valley, 64½@65½; do. 68, coupon, 120@121; do. reg., 121@122; do. 78, reg., 133@134; do. consol. mort. reg., 122; Fifth and Sixth streets (horse), 190@200; Second and Third, 112@116; Thirteenth and Fifteenth, 75@80; Spruce and Pine, 42½@44; Green and Coates, 75@81; Chestnut and Walnut, 85@92; Germantown, 65@71; Union, 110@—; West Philadelphia, 135@—; People's, 6¼@—; Continental, 100@103.

**Baltimore.**—Atlanta and Charlotte, 60½; do. 1st, 104½; do. inc., 75; Baltimore City 68, 1900, 124½; do. 68, 1886, 106; do. 68, 1890, 113½; do. 58, 1916, 122½; do. 48, 1920, 110½; Charlotte, Columbia and Augusta, 30½; do. 1st, 109; Columbia and Greenville 1st, 101½; do. 2d, 73; Cincinnati, 7-3cs, J. & J., 131½; Canton Co. 68, 109; George's Creek Coal, 91; Maryland Defense 68, 102½; Northern Central 58, Series A, 99½; do. B, 95½; North Carolina consol. 48, 79½; Ohio and Mississippi, Springfield div. 1st, 115½; Richmond and Danville gold 68, 93½; Virginia and Tennessee 88, 125; Virginia 10-40 coupons, 55; Virginia Midland pref., 60; do. 1st mort., 112; do. 2d mort., 108½; do. 3d mort., 91; do. 5th mort., 96; Wilmington and Weldon 78, 120½; Wilmington, Columbia and Augusta, 91½; do. 68, 109½. The latest quotations are: Atlanta and Charlotte 1st, 104½@105; Baltimore and Ohio, 200@205; do. 68, 1885, 104½@—; Columbia and Greenville 1st, 101½@101½; Canton 68, gold, 108½@110; Marietta and Cincinnati 78, 1891, 131@131½; do. 78, 1896, 101½@101½; do. 88, 1890, 54½@55; Norfolk Water 88, 132@—; Northern Central, 55@—; do. 68, 1904, gold, 112½@113; do. 58, Series A, 99@100; do. B, 95½@—; Ohio and Mississippi, Springfield div. 1st, 115@116; Richmond and Danville gold 68, 93½@—; Virginia consol., 51@51½; do. 10-40s, 39@39½; do. 38, 49@49½; Virginia Midland 5th mort., 95@96; do. inc., 50@57½; Wilmington and Weldon 78, 120@120½.

**ILLINOIS CENTRAL RAILROAD COMPANY.**  
FORTY-FIRST SEMI-ANNUAL CASH DIVIDEND.  
The Board of Directors have declared a dividend of THREE AND ONE-HALF per cent in cash, payable March 1, 1883, to the shareholders of the ILLINOIS CENTRAL RAILROAD COMPANY as registered at the close of business on Feb. 10. They have also declared an extra dividend of ONE-HALF OF ONE per cent in cash, payable at the same time to said shareholders, out of the earnings of the SOUTHERN DIVISION for the six months ending Dec. 31, 1882. The stock transfer-books will be closed from and after Feb. 10, until the morning of March 5.  
L. V. F. RANDOLPH, Treasurer.  
NEW YORK, Jan. 18, 1883.

**THE LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY CO.,**  
TREASURER'S OFFICE,  
GRAND CENTRAL DEPOT,  
NEW YORK, Dec. 22, 1882.  
**THE BOARD OF DIRECTORS OF THIS COMPANY** have this day declared a quarterly dividend of TWO PER CENT upon its capital stock, payable on THURSDAY, the FIRST day of FEBRUARY next, at this office.  
The transfer books will be closed at 3 o'clock p. m. on FRIDAY, the 29th inst., and will be reopened on the morning of Monday the 5th day of February next.  
F. W. VANDERBILT, Acting Treasurer.

**OFFICE CENTRAL PACIFIC RAILROAD COMPANY,**  
SAN FRANCISCO, Jan. 5, 1883.  
**THREE DOLLARS PER SHARE** will be paid on presentation of dividend warrant No. 15 on or after Feb. 1, at this office, or at the office of the company, No. 23 Broad-st., New York. Transfer-books will be closed from P. M., Jan. 15, to 10 A. M., Feb. 3. By order of the Board of Directors.  
E. H. MILLER, Jr., Secretary.

**GEO. R. WOOD,**  
**IRON AND RAILWAY BUSINESS.**  
 Steel and Iron Rails,  
**ORES.**

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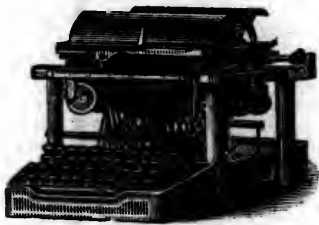
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 —OF—  
**RAILWAY APPLIANCES,**

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**CHICAGO,** from **THURSDAY,** the 24th day of May, to **SATURDAY,** the 23d day of June, 1883, in the **INTER-STATE EXPOSITION** Buildings, the largest and best adapted for the purpose in the United States.

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**E. H. TALBOTT,**

Secretary.

**LUCIUS FAIRCHILD,**

President.

**COMMISSIONERS:**

**Hon. LUCIUS FAIRCHILD,** Ex-Governor of Wisconsin and late Minister at Madrid, Spain.

**GEO. M. PULLMAN,** President Pullman's Palace Car Co., Chicago.

**AARON FRENCH,** Pittsburgh Car-Spring Co., Pittsburgh.

**J. MCGREGOR ADAMS,** Adams and Westlake Mfg Co. etc., Chicago.

**E. V. CHERRY,** Vice-President Post & Co., Railway Supplies, Cincinnati.

**A. G. DARWIN,** President Allen Paper Car-Wheel Co., New York.

**O. W. POTTER,** President North Chicago Rolling Mill Co., Chicago.

**H. E. SARGENT,** late General Manager Northern Pacific Railroad, Chicago.

**JAMES McMILLAN,** President Michigan Car Co., etc. Detroit.

**GEO. WESTINGHOUSE, Jr.,** President Westinghouse Air-Brake Co., etc. Pittsburgh.

**J. H. BASS,** Prop. Bass' Car Wheel Works, Fort Wayne.

**E. H. WILLIAMS,** Baldwin Locomotive Works, Phila.

**WM. S. EATON,** National Tube Works Co., etc. Boston.

**WM. CHISHOLM,** President Cleveland Rolling Mill Co., etc. Cleveland.

**THOMAS M. CARNEGIE,** President Edgar Thomson Steel Co., etc. Pittsburgh.

**W. H. DOANE,** President J. A. Fay & Co., Wood-Working Machinery, Cincinnati.

**M. M. BUCK,** Railway Supplies, St. Louis.

**C. W. ROGERS,** Vice-President Am. Live Stock and Meat Transportation Co., etc. New York.

**JOHN E. GREEN,** Vice-President Louisville Railway Supply Co., Louisville.

**H. CLAY EVANS,** Vice-President and General Manager Roane Iron Co., Chattanooga.

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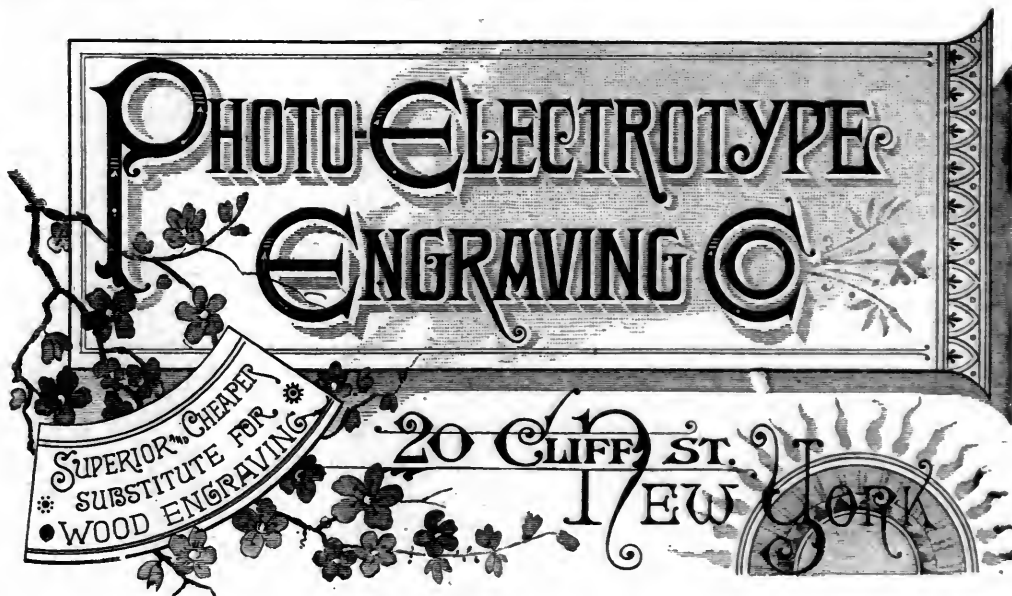
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Letters respecting the financial affairs of the Company should be addressed—

**H. F. WORRALL, Treasurer, 8 Exchange Place, Boston, Mass.**



## RAILROAD EARNINGS-MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	.....	.....
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,704,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,020,000	2,277,000	2,474,000	2,409,000	2,242,000	.....	.....
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,366	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,006	761,120	767,349	785,199	666,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	635,307	7,553,988
1882.....	579,447	530,480	594,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	.....	.....
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	1,240,664	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	.....	.....
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,217	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,670	1,591,052	1,560,597	1,555,000	17,025,468
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,629	392,921	391,950	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,056	192,299	177,161	229,858	228,653	221,320	211,614	192,623	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	.....	.....
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	548,230	548,230	606,193	589,287	638,432	547,055	643,417	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	213,913	195,607	180,376	2,230,961
1882.....	138,284	154,717	168,798	148,913	154,917	155,030	184,347	238,628	239,196	238,442	249,252	.....	.....
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	728,173	689,387	695,371	674,603	674,749	663,746	752,251	813,600	828,238	865,325	752,144	.....	.....
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	102,085	90,677	200,064	109,846	109,125	172,114	247,332	225,678	200,450	156,697	.....
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,646	256,998	.....	.....
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,107,985	1,216,215	1,192,390	.....	.....
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	155,549	160,789	210,262	256,924	262,886	258,212	2,403,224
1882.....	150,676	158,590	148,166	141,937	134,378	135,184	136,398	140,443	160,031	265,201	295,110	307,643	.....
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,256
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	.....	.....
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	170,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	237,729	2,809,255
1882.....	213,840	217,261	265,222	263,544	283,244	290,060	300,920	353,726	338,490	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,266,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,010	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	.....	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,505	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	503,683	667,488	592,435	550,225	526,685	.....	.....
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	434,331	4,044,576
1882.....	239,800	269,000	384,000	438,000	568,332	631,342	679,240	727,377	789,700	834,460	761,324	.....	.....
<b>PHILADELPHIA AND ERIE:</b>													
1880.....	224,307	245,372	327,678	334,947	311,470								

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LOCOMOTIVE AND MACHINE WORKS,  
Paterson, N. J.**

Having extensive facilities, we are now prepared to furnish promptly of the best and most approved descriptions, either

**COAL OR WOOD BURNING  
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R. S. HUGHES, Sec'y. } Paterson, N. J.  
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FROM 1-4 TO 10,000 lbs. WEIGHT.  
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**==PAPER CAR WHEELS,==  
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Especially adapted for Sleeping and Drawing Room Cars, Locomotive and Tender Trucks, Steel Tire, with annular web—strongest, most durable and economical wheel in use. Works at Hudson, N. Y.; and at Pullman (near Chicago) and Morris, Ill.

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**THE USE OF THE  
McLeod Automatic Air Railroad Signal  
Will prevent Railroad Accidents and Save Life.**

"The McLeod Air Signal is an ingenious and inexpensive device by which the coming of a train is announced far in advance, both by visible and audible signals." (Mass. R. R. Com. Report.)

This signal has been fully tested on the New York and New England Railroad at Dudley and Bird Streets, by practical operation, and has proved a complete success, to the entire satisfaction of the many prominent Railroad men and experts who have watched and examined it. It provides an Automatic Block, Crossing, Station, Switch, Bridge, Yard and Curve Signals, Gate and Revolving Lanterns. Being operated by the weight of trains passing over an incline bar, forcing common air through a tube, by means of a bellows, which is positive in its action, it is highly commended by all railroad officials who examined it.

The company can shortly fill orders to place it on any railroad, and invite communication from Railroad Officials from all parts.

**MCLEOD AIR RAILROAD SIGNAL CO.,  
4 Pemberton Square, Boston, Mass.**

New York Office with Col. Thos. R. Sharp, 115 Broadway.



### A Tunnel Resents Being a Tunnel.

In Castle District, at a point about five miles north of this city, is a tunnel that may be called an ex-tunnel. It is a tunnel that remonstrates against being a tunnel. It was run about four years ago into the side of a steep hill, and was originally about forty feet in length. When in about fifteen feet the tunnel cut into a soft, swelling clay, very difficult to manage. After timbering and striving against the queer, spongy material until it had been penetrated some twenty-five feet, the miners gave up the fight, as they found it a losing game. Being left to its own devices, the tunnel proceeded to repair damages. It very plainly showed that it resented the whole business, as its first move was to push out all the timbers and dump them down the hill. It did not stop at that, but projected from the mouth of the tunnel a pith or stopper of clay the full size of the excavation. This came out horizontally some eight feet, as though to look about and see what had become of the miners, when it broke off and rolled down the slope. In this way it has been going on until there are some hundreds of tons of clay at the foot of the hill. At first it required only about a week for a plug to come out and break off, then a month, and so on, till now the masses are ejected but three or four times per year, yet the motion continues, and to-day the tunnel has the better of the fight by about four feet.—*Virginia (Nev.) Enterprise.*

### The First Private Railway in India.

The first railway constructed in India by private enterprise has recently been opened. The length of the line in all is six miles—viz., four miles from the Baidyanath Junction on the E. I. R. to Baidyanath (Shrine) Station, Deoghur Railway, from where there is a branch to Rohini, two miles. The line crosses a rapid hill torrent, called the Derwah River, which is bridged by a girder bridge of five piers, being a length of 325 feet; and another girder bridge, sixty-five feet long, crosses the Jumna-jori, a smaller river. During the wet and rainy months these rivers overflow and flood the surrounding country, and render communication almost impossible with the town of Deoghur, where the shrine is situated, but this line will effectually do away with this difficulty. The object of this line is principally to convey the enormous numbers of pilgrims from the Baidyanath Junction, E. I. R., to the shrine of Baidyanath, Deoghur, who flock to the temple from all parts of India all round the year, and at certain Hindoo festival seasons the proportion ordinarily is quadrupled. Besides this great pilgrim traffic, which, from the E. I. R. statistics, shows over 500,000 passengers annually, the same statistics represent an outward and inward goods traffic at the Baidyanath Junction from 8,000 to 7,000 tons yearly. Between the two it is reckoned that the line cannot fail to show good results. The Deoghur Railway has been constructed and equipped at a cheapness of cost never yet rivalled in the country, namely at under \$4,000 per mile, and this including a large girder bridge. The line has been con-

structed entirely by Messrs. Burn and Co., without any guarantee, subsidy, or concession whatever from Government, further than the grant of the necessary land.—*Herapath's Railway Journal.*

### The Social Glasses.

There sat two glasses, filled to the brim,  
On a rich man's table, rim to rim;  
One was ruddy and red as blood,  
And one as clear as the crystal flood.  
Said the glass of wine to the paler brother:  
"Let us tell the tales of the past to each other,  
I can tell of banquet and revel and mirth,  
And the proudest and grandest souls on earth  
Fell under my touch, as though struck by blight,  
Where I was a king, for I ruled in might.  
From the heads of kings I have torn the crown,  
From the heights of fame I have hurled men down;  
I have blasted many an honored name;  
I have taken virtue and given shame;  
I have tempted the youth with a sip, a taste,  
That has made his future a barren waste.  
Far greater than a king am I,  
Or than any army beneath the sky;  
I have made the arm of the driver fail,  
And sent the train from the iron rail.  
I have made good ships go down at sea  
And the shrieks of the lost were sweet to me.  
For they said: 'Behold, how great you be,  
Fame, strength, wealth, genius, before you fall.  
For your might and power are over all.  
'Ho! ho! pale brother," laughed the wine.  
"Can you boast of deeds as great as mine?"  
Said the water glass, "I cannot boast  
Of a king dethroned or a murdered host,  
But I can tell of a heart, once sad,  
By my crystal drops made light and glad—  
Of thirsts I've quenched, of brows I've laved,  
Of hands I have cooled and souls I have saved;  
I have leaped through the valley, dashed down the mountain;  
Flowed to the river and played in the fountain;  
Slept in the sunshine and dropped from the sky,  
And everywhere gladdened the landscape and eye;  
I have eased the hot forehead of fever and pain,  
I have made the parched meadows grow fertile with grain;  
I can tell of the powerful wheel of the mill  
That ground out flour and turned at my will;  
I can tell of manhood debased by you  
That I lifted up and crowned anew:  
I cheer, I help, I strengthen and aid;  
I gladden the heart of man and maid;  
I set the chained wine-captive free,  
And all are better for knowing me."  
These are the tales they told each other—  
The glass of wine and its paler brother—  
As they sat together, filled to the brim,  
On the rich man's table rim to rim.

### Marshall Car and Foundry Co.

THIS company is located in Marshall, Texas, was incorporated in 1880, and is the successor of the Marshall Manufacturing Company, which was established in 1875. The foundry manufactures car wheels and all kinds of railroad castings, which are produced from Texas iron, this metal being superior to most of the iron found in the Southwest, for that purpose. The company also manufacture freight cars, their work in both cars and car wheels being almost exclusively for the Texas and Pacific Railroad and the International and Great Northern Railroad. The foundry and shops were started seven years ago, with a capital of only \$10,000, and the enterprise has prospered so rapidly that it now has an invested capital of \$140,000. They will soon erect a large blast furnace at a

cost of \$50,000, and turn out their own pig iron from native ores. The company manufacture an average of 800 car wheels per month, and employ in their busy seasons upward of 360 workmen in their foundry, machinery and car departments. The officers of the company are Messrs. Charles Cobb, president; 392 Clinton street, Brooklyn, N. Y., and John F. Dickson, vice-president and general manager, Marshall, Texas.

THE first experiments in using locomotives for hauling canal boats, the rails being placed on the banks of the canal, were made in France in 1879. A company was then started for the purpose, and the results obtained were satisfactory. The company originally tried this system on the canals from Neulosse and Aire to La Bassa, which have a length of sixty kilometers. The locomotive, which weighs five tons, can haul five or six boats, or a floating weight of 1,000 tons. The speed is four kilometers an hour. During the last experiments the results are said to have been so satisfactory that the method has been introduced on all the canals of the Department de Nord from Lille and Dunkirk to Flanders.

A LONDON journalist, writing upon the subject of street railways, says: "It would be idle to object to tramways in the broad street and among the infrequent shops which are found in suburban London. There the numbers of those who find the tramcars useful are out of all proportion to the numbers of these who find them a nuisance, and it is only reasonable that the interests of the majority should decide the question. But when we get nearer London we find that the proportion between the two classes is altogether changed. The passengers in the tramcars are few in comparison with those to whom tramways and all that belongs to tramways are a simple abomination."

Our Cleveland contemporary, *The Trade Review and Western Machinist*, says: "How long will it be before the expensive system of horse-locomotion will be dispensed with on Cleveland street car lines, and steam, cable, spiral spring or electricity substituted? The cable system in Chicago, which has been the object of closest scrutiny since its adoption, has achieved a decided victory, in the view of such high engineering authority as the *American Engineer*, for its ability to cope with even a heavy fall of snow."

THE estimated cost of the proposed ship-canal from Bordeaux, on the Bay of Biscay, to Narbonne, on the gulf of Lyons—a distance of 240 miles—is nearly \$300,000,000. It is proposed to tow vessels by locomotives running along the banks, and the voyage from the Atlantic to the Mediterranean is expected to be made in three days. In addition to this vast engineering scheme is that for uniting the Loire and Rhone by canal, with, of course, a similar purpose.

An incautious youth startled his friends by announcing that he had met at a ball "a young lady who had vaccinated him on the spot, his real meaning being 'fascinated.'"

"RAILWAY Masonry and Bridge Foundations," by James Hasley, master mason of the Little Rock and Fort Smith Railway, is a manual of more than sixty pages, neatly printed, carefully illustrated, and bound in cloth. Its contents record the experience of a practical mason occupying a responsible position, and who knows whereof he speaks. Mr. Hasley writes good, simple English, and is not afraid of the first personal pronoun, although manifestly a modest and sensible man, for he does not pretend to instruct in matters upon which he is not adequately, that is experimentally, informed. The value of this little book lies in its immediate adaptability to service in railroad masonry. We recommend it without hesitation. Among other matters treated are the various kinds of stone and styles of masonry employed on railroads; the various styles of dressing, pointing joints, foundations, manner of construction, with a section on abutments, box and arch culverts, hydraulic foundations, concrete work, and protection against scour. "Railway Masonry" is published by The Railway Age Publishing Company, Chicago, the courtesy of whom in sending us a copy, is hereby acknowledged.

THE smoker is not ubiquitous. He can find no place for the enjoyment of the weed in the majority of the street-cars of this great metropolis. As regards the Elevated Railroad, the man of business who likes an after-breakfast cigar must perforce postpone this pleasure until he leaves his seat in one of its cars. He has an advantage, however, over the traveler in the surface-road cars running beneath him, who is, as a rule, not only cut off from his smoke but has to ride with cold feet. 'Tis but fair to add that the cars of the Second avenue surface railroad are comfortably heated, and that some on the Third avenue are provided with a smokers' compartment.

It is related on good authority that during the recent war with the Transvaal Boers, the captain of an English iron-clad received orders from home to "lie off the town of Potchefstroom, but not to bombard it"—the said town lying several hundred miles inland, among the hills of the Transvaal.

ADVERTISE in the Railroad Journal.

## The Anglo-American Land Mortgage And Agency Company (Limited). CAPITAL, £500,000.

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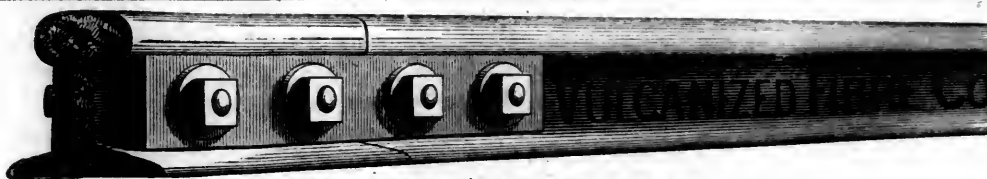
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which form non-metallic, permanently elastic compensating cushions, absorbing shocks and vibrations, and absolutely locking the nuts. These Washers have been adopted by a large number of railroads as the cheapest and best device in use. Flexible vulcanized-fibre dust guards and oil box packings, which are absolutely unaffected by oil and grease, are far more durable than leather and much cheaper.

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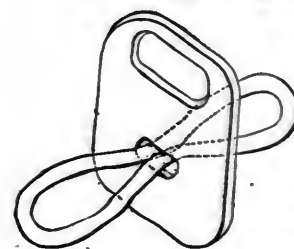


THE JENKINS STANDARD PACKING is acknowledged by users as the *Best* in the world. Unlike all other Packings, the **Jenkins Standard Packing** can be made any thickness desired in a joint by placing two or as many thicknesses together as desired, and following up joint it vulcanizes in place and becomes a metal of itself (it is frequently called Jenkins Metal), and will last for years, as it does not rot or burn out. Avoid all imitations, as a good article is always subject to cheap imitations. The **genuine** has stamped on every sheet, "**Jenkins Standard Packing**," and is for sale by the Trade generally. Manufactured only by

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PROPRIETORS JENKINS PATENT VALVES, PACKING, &c.  
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## SWEETLAND SAFETY LINK GUIDE.

Patented August 29, 1882.



The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six pounds.

For further particulars address,

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The undersigned, agents for the manufacturers, are prepared to contract to deliver best quality American or Welsh Steel or Iron Rails, and of any required weight and pattern. Also Spiegel and Ferro Manganese

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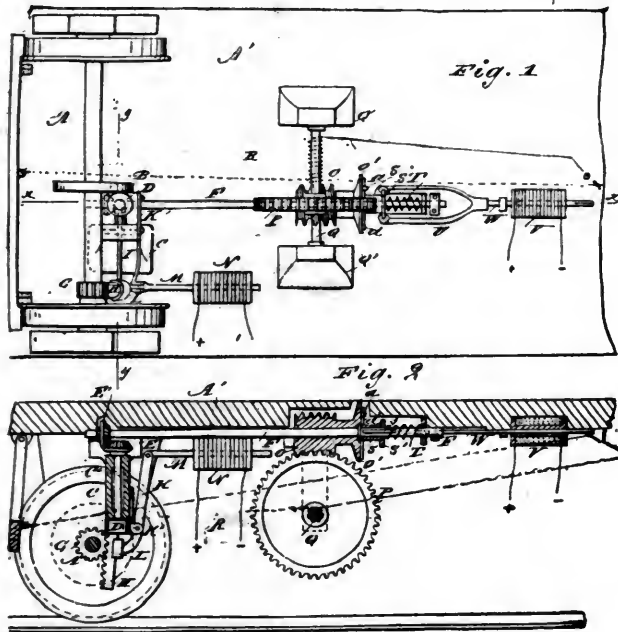
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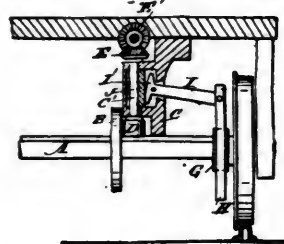


**Electric Car-Brake.**

THE Electric Car-Brake invented by P. V. CONOVER, of Uvalde, Texas, has on the car-wheel axle a small cog-wheel near the car-wheel, and on the same axle near the center is a friction-wheel. Both these wheels revolve with the car axle. Fastened to the bottom of the car and reaching down to the friction-wheel is a hollow stand, in which is a vertical shaft, at the lower end of which is a friction-wheel, and on the upper end a bevel cog-wheel. This



shaft is so arranged that its lower end has about a half-inch play. Fulcrumed in the hollow stand in which the shaft is set is a lever, T-shaped at the short end, while the long end is attached to a small bar with cogs on one side of it. This bar plays near the cog-wheel on the car axle. There is another lever fulcrumed to the hollow stand, the short end of which is attached to the bar with the cogs on it. The long end of this lever is attached to the armature of an electro magnet. Now, when the poles of the battery are closed, the armature is drawn to the magnet, drawing the end of the lever with it and moving the other end out, and thus forcing the bar with the cogs on the cog-wheel and putting the long end of the T-shaped lever up or down, as the case may be, and forcing the end of the vertical shaft with the friction-wheel on it against the friction-wheel on the car-shaft, thus giving



motion to the vertical shaft. Now, there is a horizontal shaft, on one end of which is a bevel cog-wheel that works in the one on the vertical shaft, and near the other end is a screw or worm-wheel which works into a cog-wheel that is on the shaft to which the chains are fastened that work the brake-levers on the end of the horizontal shaft. Near the screw-wheel is a collar which slides loosely on a key. This collar has one or more arms, and on the end of the screw-wheel next the collar is one or more pins or pawls that catch on the arms of the sliding

collar, the screw-wheel being loose on the shaft and the pins catching on the arms of the collar, causing the screw to rotate with the shaft, and thus rotating the wheel attached to the shaft to which the chains are fastened that work the brake lever. Now, when the vertical shaft rotates it turns the shaft to which the screw is attached, thus rotating the screw and with it the chains, shaft, wheel, and thus closing the brake. Now there is a forked rod, the forks of which being a little further apart than the diameter of the collar, and each fork

having a hook and so arranged as to catch on the rim of the other collar, the other end of the forked rod enters a helix. When the brakes are on, and it is necessary to loosen them, close the poles of the battery connected with this helix. This draws the forked rod back, and with it the sliding collar, leaving the screw-wheel loose on the shaft, while the tension of the brakes unwinds them.

This brake is operated by electricity. The battery is on the engine, and the power required is very small. The brake can be so arranged that if a train break in two the brakes will go on every car on the train. It can be worked on a single car with a lever, and is easily managed. The brake can be worked from a single car by means of a lever as well as from the engine, and can be worked by a child as easily

as by a man.

**Reid's Lightning Brace.**

THIS useful invention, which is manufactured by A. H. REID, 1631, 1633 and 1635 Barker street, Philadelphia, Penn., is specially designed for light boring and screw driving. It is very quick in its work, and as the power is applied on the top it may be used with great force. It may be used either automatically, running the bit both back and forward, or to turn the bit one way only, as is necessary to drive a screw or bore a hole with an auger bit. This is done by means of the divided head, which acts as a fast and loose pulley, there being no ratchet about it to get out of order. It is made strong and durable. The metal part is finely polished and nickel-plated. The trimmings are of lignumvitæ and rosewood.

A patent has been allowed on the Lightning Brace, which gives promise of extensive usefulness. The manufacturer sends full particulars in answer to inquiries.

**Bond's Car Brake.**

George F. Bond, Troy, New York, has invented a car-brake, the object of which is to provide that it be applied easily at any time from any part of the train, and which need not be operated by manual labor.

The invention consists in a car-brake formed of brake-shoes attached to the ends of a toggle-lever connected by means of an elbow lever with a longitudinally-movable rod held on the bottom of the car and provided with a bumper-head at one end. The opposite car is provided

with a vertically adjustable bumper-head, and when the same is lowered and the cars are caused to bump together by checking the speed of the engine, the rod is moved longitudinally, the joint of the toggle-lever is pressed downward, and the brake-shoes are pressed against the wheels. The machinery, by means of which the objects sought are effected, is secured by letter-patent, granted December 5, 1882. If a train runs off the track or an axle breaks, or other accident happen, the brakes are applied automatically and immediately.

**Texas Pacific Railroad Litigation.**

IN 1856 a project was formed for building a Southern Pacific Railroad to run across Texas to the Pacific Coast. The first link in the trans-continental chain was from Shreveport, La., to Marshall, Tex. By the time this was finished the enterprise broke down pecuniarily, and the road was several times sold out by a sheriff. After the war, in the year 1866, the enterprise was revived, and a loan of \$150,000 was made to the road by a Louisville syndicate. The enterprise failed in 1868, and the road was sold and bought in by the Louisville syndicate, in order to secure their debt—they assuming to pay other prior mortgages and debts to the amount of about \$500,000. They took charge of the road and put about \$8,000,000 more into it, obtained the passage of a number of laws by the National Congress and the Texas Legislature in aid of the road, and at last succeeded in 1877 in selling the property to the Texas Pacific Railroad Company for \$3,000,000 in land grant bonds. Gould and Vanderbilt afterward put about \$28,000,000 more into the road, and it is now completed and forms a great trunk line from ocean to ocean. The stockholders in the old company, who sold out in 1868, waited till 1873 and brought suit in the Louisville Chancery Court against the Louisville syndicate to recover the road and all the profits the syndicate had made upon it. The case has been fought vigorously on both sides. It was argued and submitted in November, 1882, and on the 12th inst. Chancellor Edwards returned a verdict in favor of the defendants. The Chancellor held that there was no fraud on the part of the defendants in purchasing the road in 1868; that they were compelled to purchase it to save their debt. He also held that the suit was defective, because the trustees of the old corporation, who properly represent it, were not parties to the suit; also that the delay of the old stockholders from 1868 to 1873 before suing was such negligence as to prevent them from afterward asking the aid of the Chancellor to recover back from defendants the road which the latter had made valuable during their delay by the free use of money, time and energy.

A COKE car has been built at Harrisburg, Penn., for Robert Hare Powell. It is 35 feet in length and 11 ft. 4 in. in height, and has a capacity of 24 tons of coke. There are gates in the sides and traps in the floor, which admit of the cargo discharging itself with little difficulty.

"To things of praise a seller's praise belongs," and what more natural than for the stationer to praise the most popular steel pens he sells—Esterbrook's.

# THE SALMON CAR HEATER



"36 per cent of coal saved and the car kept noticeably warmer!"

by using **THE SALMON CAR HEATER**.  
It Insures Safety from Fire in case of Accident,  
Economy in Fuel and **RAPID CIRCULATION**. It heats quickly, is **SELF-REGULATING**, and can be used for  
either **STEAM OR HOT WATER**.

The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a **low State of combustion** without danger of chilling the fire.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

**CORRESPONDENCE SOLICITED.**

**The Salmon Heater Co.**

OFFICE, 48 CONGRESS STREET. BOSTON, MASS.



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Manufacturers of Fine

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MADE ENTIRELY OF STEEL  
ONE MAN with it can easily move a loaded car.  
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Wilmington, Delaware.

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**WRITING MACHINE**  
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### Railway Exposition Items.

THE Chicago Common Council has granted the commissioners the privilege of laying tracks through the Lake Park into the Exposition building for the convenience of exhibits of cars, locomotives and heavy machinery, also of erecting an annex at the south end of the present building.

Assurances have been received from London that an interesting collection of exhibits may be expected from England.

Parties are arranging to build and operate an electric passenger railway around the inside of the gallery of the main building during the exposition, the length of which will be one-third of a mile, and a model gravity road, to carry passengers also, will be operated from a point on the main floor to a point a hundred feet distant, on the west wall, thirty or forty feet above the floor.

More than half the amount of space at the disposal of the commissioners has already been applied for.

The following letter has been received by secretary Talbott from F. Lange, of the Imperial German Legation at Washington:

"I am aware that a National Exposition of Railway Appliances will be held in Chicago and opened on the 24th of May. If there has not yet been given notice to the Prussian government, which controls a very great system of lines, I beg you to give me all the information about it, in order that I may communicate the same immediately to my government."

Appliances for space come from every state and territory and from most foreign countries in which railways are operated, and the complete success of the exposition is assured beyond question.

### Land Grant Railroads.

THE Secretary of the Interior transmitted to the House of Representatives at Washington on the 15th inst., a letter showing what land grant railroads have been completed within the period fixed by the acts granting them charters. Since March 27, 1882, the date of the last report, the roads named have completed additional miles as follows: Atlantic, Gulf and West India Transit Company Railroad, in Florida, 26 miles; Pensacola and Atlantic Railroad, 40; North Wisconsin Railroad, 60 miles; North Pacific Railroad, 404 miles; Atlantic and Pacific Railroad (in Indian Territory), 250 miles.

On the following roads no work has been done since March 27, 1882: Gulf and Ship Island, Tuscaloosa and Mobile, Mobile and New Orleans, Coosa and Tennessee, Coosa and Chattanooga, Elyton and Beard's Bluff, Memphis and Charleston, the railroad from New Orleans to the State line in the direction of Jackson, Miss., Iron Mountain, in Arkansas.

The communication states that no lands have been patented for any uncompleted road since March 27, 1882, except in the case of the Wisconsin Central.

An electric railway, for the purpose of carrying passengers around the inside of the gallery of the building, will be one of the features of the Exposition of Railway Appliances to be held in Chicago in May next. The length of this railway will be about one-third of a mile.

### Lots of Fun in Him.

ONE of the members of the Methodist Conference held in Detroit was out for a walk at an early hour one morning, and encountered a strapping big fellow who was drawing a wagon to a blacksmith shop.

"Catch hold here and help me down to the shop with this wagon, and I'll buy the whiskey," called the big fellow.

"I never drink," solemnly replied the good man.

"Well, you can take a cigar."

"I never smoke."

The man dropped the wagon tongue, looked hard at the member, and asked:—

"Don't you chew?"

"No, sir," was the decided reply.

"You must get mighty lonesome," mused the teamster.

"I guess I'm all right; I feel first rate."

"I'll bet you even that I can lay you on your back," said the teamster.

"I never bet," said the clergyman.

"Come, now, let's warm up a little."

"I'm in a hurry."

"Well, let's take each other down for fun, then. You are as big as I am, and I'll give you the under hold."

"I never have fun," solemnly replied the member.

"Well, I'm going to tackle you anyhow. Here we go."

The teamster slid up and endeavored to get a back hold, but he had only just commenced his fun when he was lifted clear off the grass and slammed against a tree box with such force that he gasped a half dozen times before he could catch his breath.

"Now, you keep away from me," exclaimed the minister, picking up his cane.

"Bust me if I don't," replied the teamster as he edged off. "What's the use in lying and saying you didn't have any fun in you, when you are chuck full of it? You wanted to break my back, didn't you?"

THE next regular meeting of the Western Association of General Passenger and Ticket Agents, of which W. H. Dixon, 150 Monroe street, Chicago, Ills., is president, will be held at the Southern Hotel, St. Louis, Mo., on Wednesday, February 14, 1883, at 11 o'clock a. m. As the annual election of officers will take place at this meeting it is hoped all the members will endeavor to be present.

A FIRST-CLASS narrow gauge locomotive weighs 44,000 pounds or equivalent to the weight of 16,192,000 of Esterbrook's Mammoth Falcon Pens.

MAN is an animal that cannot long be left in safety without occupation; the growth of his fallow nature is apt to run into weeds.—*Hillard*.

THE temperate are the most truly luxurious. By abstaining from most things, it is surprising how many things we enjoy.—*Simms*.

ADVERTISE in the Railroad Journal.

THE exports of mineral oils from the United States were the fourth on the list of values during the fiscal year 1882. The percentages of the first four commodities were as follows: 1, Cotton, raw and manufactures of, per cent, 29.05. 2, Breadstuffs, per cent, 24.91. 3, Provisions, per cent, 16.46. 4, Mineral oils, per cent, 6.99. Then follow: Wood, tobacco, iron and steel, live stock, leather, oil cake, furs, drugs and chemicals and dyestuffs, seeds (clover, timothy and cotton), tallow, spirits of turpentine, coal, naval stores, etc. The annual report of the exports of petroleum were not complete in the Government statistics until 1864. In that fiscal year the value amounted to \$10,782,689. In 1870 the value was \$32,668,960, and during 1882 it was \$51,232,706, the largest ever known.

THE master mechanic of the Canada Southern Railway pronounces the automatic car coupler invented by Henry McIntyre, of Wallaceburg, the best thing of the kind he has ever seen. The drawhead is so arranged that the pin can not only be withdrawn by the brakeman by means of a chain, which reaches to the top of the cars, but the act of uncoupling sets the pin in position for the next coupling. The necessity of going between the cars to make a coupling is also avoided, the pin being so arranged that when two cars come together it drops down, thus acting as a self-coupler. The link has a play of from five to six inches to provide for the unequal height of cars. The invention is pronounced by competent judges to be the only coupler yet introduced which will prove effective in saving the lives of brakemen.

THE population of Portland, Oregon, is less than 35,000, and yet it spent last year \$3,000,000 in new buildings; turned out of its factories, mainly in wood and iron products, a total value of \$7,434,800; conducted a wholesale trade amounting to \$40,000,000; imported \$23,128,981 worth of commodities, and exported \$15,366,388, of which all but a few thousand dollars represent flour and salmon; advanced its real estate transactions to nearly \$7,000,000, and spent nearly \$400,000 on its streets.

THE law providing for compromising, computing and settling a portion of the State debt of North Carolina expired before several millions of the bonds had been exchanged. In accordance with the suggestion of the State Treasurer, the Legislature has extended the operations of the act for two years, to allow ample time for full exchange and settlement.

According to the report of the Treasurer of Ontario the expenditures of that Province for the year 1882 amounted to \$2,919,133.81, and the revenue to \$2,880,066.31, being a deficit of \$39,067.50. The estimates for 1883 amount to \$2,559,283.63, being \$169,557.31 in advance of 1882.

THE first through train of passenger coaches reached San Antonio from El Paso on the Southern Pacific Railroad on the 20th ult.

AN order has been made for the voluntary winding up of the Honduras Inter-oceanic Railway Company.

**The Best Salesman.**

NEWSPAPER advertising offers such facilities for addressing all classes from which customers would be likely to be attracted, that it is now recognized by shrewd business men as the best of all possible salesmen—one who never sleeps and is never weary—who goes after business early and late—who accosts the merchant in his shop, the lawyer in his office, the student in his study, the cultivated woman at the family fireside—who can be in a thousand places at once, and speak to a million people each day, saying to each one the best thing in the best manner.

It is always at work, early and late, and does only and exactly what it is told to do. It can be monopolized by no one, but, while doing your neighbor's work, is ready to do as good or better service for you.

THE government have 160 men at work on the graving dock at Esquimaux, B. C. The cost of the dock will exceed a million dollars.

**STRIKING HEAD LINES.**

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

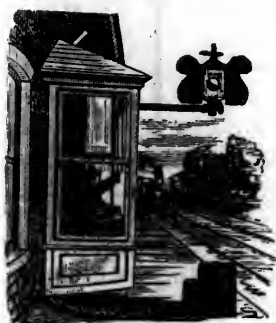
Its **EIGHT** Trunk Lines traverse the best portions of **Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.**

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs,** as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

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General Manager.  
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BANKERS & BROKERS,**

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Devote special attention to the purchase and sale of Stocks and Bonds in the Boston market, the careful selection of securities for investment, and the negotiation of commercial paper.

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**BROWN BROTHERS & Co.,  
No. 59 WALL STREET, NEW YORK,**

—BUY AND SELL—

**BILLS OF EXCHANGE**

—ON—

GREAT BRITAIN, IRELAND, FRANCE, GERMANY, BELGIUM, AND HOLLAND,

Issue Commercial and Travelers' Credits in Sterling, AVAILABLE IN ANY PART OF THE WORLD, AND IN FRANCS IN MARTINIQUE AND GUADALOUPE.

Make TELEGRAPHIC TRANSFERS OF MONEY between this and other countries, through London and Paris.

Make Collections of Drafts drawn abroad on all points in the United States and Canada, and of drafts drawn in the United States on Foreign Countries.

**A FREE GIFT.**

Any of our readers who will enclose two three-cent stamps in a letter to the **Columbus Buggy Co., Columbus, O.**, will receive in return a beautiful engraving in colors, representing an **Australian scene**, and their manner of traveling in that country with **Ostriches** as a motor. They give this picture, (the packing costing six cents), to all who may send for it, desiring in this manner to make themselves more widely known to the people.

[Mention this paper.]

ESTABLISHED 1842.

**INGERSOLL LIQUID RUBBER PAINT.**

The only Paint unaffected by Moisture, Fumes from burning Coal Gas, Sun, Salt Air or Water.

**THIS IS RELIABLE.**

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76 FULTON STREET,  
Cor. Gold Street, NEW YORK.**



### Railway Speed.

A TABULAR statement of the greatest speed of railway trains in Europe and the United States, published in a German journal, *Die Verkehrszeitung*, shows that people generally exaggerate the rapidity with which long distances are traversed, even in the cases of trains specially famous for their speed.

One of these trains is that which runs on the Great Northern road, from London to Edinburgh, via York. The distance is 397 miles, and the time is nine hours. The average speed, therefore, is 44.1 miles an hour. The distance from Euston is 401 miles, and London and Northwestern trains make the run in ten hours, or 40.1 miles an hour. By the Midland Railway the distance is 404 miles, and the time is ten hours and five minutes, or very nearly the same speed.

It must be remembered, however, that these are great distances, and that time is necessarily lost in stops, one of which is a very considerable one. To get high average speed there must be long intervals between stopping places, for time is lost not only at the stations, but also in getting into and out of them. The actual speed when the train is running at its fastest is therefore much greater than the average speed, and this explains why passengers who time the train while it is going over certain distances without stopping are surprised when they are given the average rate of speed.

The fastest train in the world is the Flying Dutchman, broad gauge, which makes the run to Swindon at fifty-three and one-half miles an hour. One train runs to Peterborough at fifty-one miles an hour, which is about the speed repeatedly made in the run from London to Grantham. The Great Northern trains run from London to York, 188 miles, at the rate of forty-eight miles, whereas, as we have seen, for the whole of the distance to Edinburgh, 397 miles, the average speed is only 44.1 miles. The quickest run in the United States is that between New York and Philadelphia, forty-seven and two-third miles an hour. Some of the fastest trains in the world are those run between Leeds and London. The distance by the Great Northern is 186½ miles, and a special train makes the run in four hours and five minutes, or at an average speed of 45.4 miles an hour. The distance by the Midland is 196 miles, and is traversed in four hours and thirty minutes, an average speed of 43.5 miles an hour.

About the most perfect piece of mechanism we have on a large scale is our modern locomotive, and it does not seem probable that its development will go much further. It is "hard to beat," as the London *Engineer* says; but its proportions may be so increased that an average speed of sixty miles an hour for long runs may be obtained with a comparatively light train. That high limit may be reached in the future, and it is no doubt not difficult of attainment, especially with our American locomotives, less cumbersome than those of England. But there seems to be little disposition among railway managers at present to endeavor to reach that end. The tendency is not toward trains of extraordinary rapidity, though the average speed of all trains may be increasing. The reason for

that is that the wear and tear of the road are too great for economical management with locomotives so heavy and velocity so enormous. But an average speed of sixty miles an hour, even for long runs, is entirely feasible.

### Stopping Steam Engines by Electricity.

AMONG the various uses to which electricity may be put there is one of a very simple and practical nature, which promises to effect a great saving of property and life if brought into general operation. The inventor of this new contrivance is Mr. Tate. But, to speak correctly, it is rather an application of existing electric power than a new discovery. Simply, the contrivance is an arrangement for the immediate stoppage of a steam engine, by merely pressing a button similar to those by which electric bells of fire alarms are sounded. This button may be placed at any distance from the engine upon which it acts; and Mr. Tate proposes that a number of such buttons should be dispersed throughout the factory or elsewhere where the apparatus is in use. In factories accidents occur almost daily through the impossibility of stopping machinery on the instant. Such accidents will, it seems, be readily avoided by this method of instantaneously stopping the engine from any part of the building in which it works. The principle of the contrivance depends on the action of an electro-magnet upon the stop valve of the engine.—*St. James Gazette.*

### Distance Indicator for Locomotives.

AN instrument has been lately invented by a Sicilian, Signor Vito, which is meant to show the engine driver at any moment, with close approximation, the point reached on a journey, and also sets the whistle in action at a given point, where special attention may be necessary. The first part, for indicating the length of line run, is an ordinary counter, with three discs, each divided into 100 parts, and traversed by a needle set in motion by the engine wheels. The first disc indicates 10 metres for each division, the second kilometres, the third 100 kilometres. For the second part, Signor Vito uses a cord of a certain length, which the reaction of a spring tends to wind on a drum. This cord passes between friction-pulleys, governed by the counter, so that its rate of winding on the drum depends on the progress of the locomotive. A spiral spring wound up and held by a peg is connected to the valve of the whistle.—*Ilerapath's Railway Journal.*

THE returns of the British Board of Trade for December, 1882, show that there was a decrease in exports as compared with December, 1881, of \$10,052,505, or ten per cent. The imports for the same month increased \$10,669,395, or over six per cent, as compared with December, 1881. The imports for the whole year 1882 show something less than four per cent gain over the previous year, while the exports for the same period show a gain of three per cent. A striking result of the collapse in prices on this side of the ocean is seen in the fact that while we shipped to Great Britain more wheat in December, 1882, than during December, 1881, they paid us nearly \$1,000,000 less money for it.

### Growth of South Carolina.

IN 1870 South Carolina produced 224,500 bales of cotton and 9,735,465 bushels of grain. There were 88 acres of improved land to the square mile, and 6 bales of cotton and 287 bushels of grain were made to the square mile. In 1880 there was produced 522,548 bales of cotton and 17,010,593 bushels of grain. There were 111 acres of tilled land to the square mile, and 15 bales of cotton and 501 bushels of grain were made to the square mile. In 1870, 147 pounds of lint cotton and 13 bushels of grain per capita of population were produced. In 1880, 245 pounds of cotton and 17 bushels of grain. The value of the difference between the yield of corn, wheat and oats in 1881 and 1882 is more than the value of the whole amount of farm supplies purchased outside of the State. In 1870 there were 745 looms and 34,683 spindles in the cotton mills in the State, and the capital invested was \$1,336,000. The mills paid in wages that year \$257,680, and employed 1,123 hands. They consumed 4,750,823 pounds of cotton, and the value of all the products of the mills was \$1,529,937. In 1880 there were 1,776 looms, 92,788 spindles; capital invested, \$2,768,500; wages paid, \$340,166; hands employed, 2,195; pounds of cotton consumed, 14,869,500, and the value of all the products was \$3,750,770.

### Is Paper to be the Rail of the Future?

IT is well known that one of the best materials for car wheels is paper. It is now stated that paper can be utilized for the manufacture of rails, in place of steel, which has almost displaced iron. It is said in favor of the new material that the cost per mile will be less by one-third than that of steel, and it will last much longer, being almost indestructible. There is no expansion or contraction from heat and cold, consequently no loose or open joints; and, being so much lighter than steel or iron, the rails can be made longer and connections perfectly solid, making the road as smooth as one continuous rail. The adhesion of the drivers of the engine to this material will be greater than that of steel, consequently the same weight engine will haul a larger load. There will be a great saving of fuel, and the smoothness of the rail will lessen the wear and tear of rolling stock. The rails are made wholly and entirely of paper, and so solid that the sharpest spike cannot be driven into them. The action of the atmosphere has no effect on it, will neither rust nor rot, and, with paper wheels and rails of the same material, our palatial trains will glide over the prairies at the rate of 60 miles an hour with as little jolt and jar as on an ocean steamer.—*Boston Journal.*

DR. SIEMENS, the learned president of the British Association, said in a recent lecture: "The burning of raw coal for domestic purposes is very wasteful. Coal should be reduced to gas and coke; gas can be burned more economically than coal, while coke and other so-called waste products resulting from the manufacture of gas are of more money value than the coal originally used." His anxiety is to make London more habitable.



ENGINEERS, Mechanics, Mill Owners, Builders, Manufacturers, Miners, Merchants, etc. will find in MOORE'S UNIVERSAL ASSISTANT AND COMPLETE MECHANIC, a work containing 1016 pages, 500 Engravings, 461 Tables, and over 1,000,000 Industrial Facts; Calculations, Processes, Secrets, Rules, etc., of rare utility in 200 Trades. A \$5 book free by mail for \$2.50, worth its weight in gold to any Mechanic, Farmer or Business Man. Agents Wanted. Sure sale everywhere for all time. For Illustrated Contents Pamphlet, terms, and Catalogue of 500 Practical Books, address NATIONAL BOOK COMPANY, 73 Beekman Street, New York.

E. W. Vanderbilt.

E. M. Hopkins.

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CAR AND RAILROAD LUMBER,

White and Yellow Pine, Oak, Gum  
and Cypress Cut to Order,

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NEW YORK.

Creosoted and Treated Lumber and  
Ties, Pine Boards, Plank and Di-  
mensions Lumber to Order.  
GENERAL RAILROAD SUPPLIES.



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Manufacturers of the Latest Improved

## WOOD-WORKING MACHINERY

—FOR—

CAR BUILDERS, PLANING-MILLS,  
CABINET, CARRIAGE, AND RAILROAD  
SHOPS, HOUSE BUILDERS,  
SASH, DOOR, AND BLIND MAKERS.

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RAILROAD



TRACK SCALES.

## RIEHLÉ BROS.

STANDARD

# SCALES

AND  
TESTING  
MACHINES

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115 Liberty Street.

ST. LOUIS:  
609 North Third Street.  
NEW ORLEANS:  
142 Gravier Street.

Our Testing Machines have just been awarded the "Special Silver Medal" at the American Institute Fair of 1882, New York City.

## PARDEE CAR WORKS,

WATSONTOWN, PA.



## PARDEE, SNYDER & Co., LIMITED,

Proprietors.



Manufacturers of Mail, Baggage, Box, Gondola, Flat, Gravel, Ore, Coal, Mine, and Hand  
Cars; Kelley's Patent Turn-Tables, and Centers for Wooden Turn-Tables; Car  
Castings, Railroad Forgings, Rolling-Mill Castings, Bridge Bolts, Castings.

We have, in connection with our Car Works, a Foundry and Machine-Shop, and are prepared to do a general Machine Business.

Chairman: ARIO PARDEE.

Secretary: N. LEISER.

Treasurer and General Manager: H. F. SNYDER.

New York City Office—Room 2, No. 161 Broadway.

C. W. Leavitt, Agent.

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MADE OF THE  
BEST STOCK  
AND IN THE MOST  
careful  
MANNER.  
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## IMPORTANT ANNOUNCEMENT TO INVENTORS.

THAT department of the AMERICAN RAILROAD JOURNAL which contains descriptions of new inventions properly coming within its range of subjects, is regarded with great notice and favor, particularly by those directly interested in learning what the latest applications of mechanical ingenuity in railroading are, and by those who have produced inventions which they desire to make as widely known as possible.

The large and widespread circulation of this paper, its prestige as the oldest railroad journal in the world, and the weight attached to its contents by the general consent of leading railroad men in all countries, give such value to its carefully prepared descriptions of new machinery and appliances as cannot be found outside of its columns.

The interest manifested by inventors in supplying us with information of their doings, and the eagerness with which this is received, encourage us to give an increased attention to that department of this paper treating of new inventions.

We therefore repeat our invitation to all persons who have produced what they regard as improvements coming within the range of railroad operations, to communicate with us promptly regarding the same.

All matter sent us will be thoroughly examined and considered, and no inventions in our opinion likely to be practicable and useful will be passed over without receiving due attention from us.

### List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF JANUARY 23, 1883.

- 270,890 Back-Pressure Valve. Charles F. Copeland, Boston, Mass.
- 270,897. Fan-Blower: Charles Hammelmann, Buffalo, N. Y.
- 270,908. Car-Axle Box: Henry Millholland, Philadelphia, Pa., assignor of nine-twentieths to Robert W. Lesley and Charles V. Grant, both of same place.
- 270,915. Steam-Boiler: Nathan P. Stevens, Concord, N. H.
- 270,927. Regulating the Supply of Oil to Vapor-Engines: Geo. B. Brayton, Boston, Mass., assignor to the Brayton Petroleum Engine Company, same place.
- 270,937. Steam-Injector: John Desmond, Jackson, Mich., assignor of two-thirds to Walter A. Bennett and Theodore G. Bennett, same place.
- 270,938. Street-Car Motor: Orlando R. Erwin, Chicago, Ill.
- 270,962. Car-Brake: Aldis H. Marden, Cambridge, Mass.
- 270,982. Compressed-Air Motor: Charles W. Potter, New York.
- 270,985. Car-Truck: Richard L. Robertson and Oliver S. Burdett, New Orleans, La.
- 270,986. Balanced Slide-Valve: Ferdinand Rochow, Brooklyn, N. Y.
- 270,999. Road-Engine: Edward J. Taylor, Alaska, W. Va., and Charles L. Pagenhart, Boyceville, Va.; said Pagenhart assignor to said Taylor.
- 271,003. Piston-Packing: Stephen D. Tucker, New York.
- 271,005. Steam-Engine Lubricating Attachment: H. Herman Westinghouse, Pittsburgh, Pa.
- 271,014. Wood-Working Machine: Jos. G. Austin, Camden, N. J.
- 271,018. Saw-Table Gags: Daniel K. Barnhart, Gaines, Pa.
- 271,026. Nut-Lock: James N. Bradford, Bay City, Mich.
- 271,027. Smoke-Consuming Furnace for Locomotives: Edwin L. Brady, New York.
- 271,035. Sanding Device for Locomotive: Jno. B. Collin, Altoona, Pa.
- 271,040. Hydropneumatic Engine: Levi G. Cook, Mapleville, R. I.
- 271,042. Electric Locomotive: Charles G. Curtis and Francis B. Crocker, New York.
- 271,045. Car-Coupling: James M. Duleney and Thomas Owens, Topeka, Kan.
- 271,066. Car-Starter: William H. Harrison, Louisville, Ky., assignor to himself and Hardin H. Littell, same place.

- 271,067. Stop-Valve: Michael Hastings, Brooklyn, N. Y.
- 271,073. Valve: Charles Jenkins, Boston, Mass.
- 271,076. Piston-Packing: Delbert W. Jewell, Alexander, N. Y.
- 271,077. Oil or Water Injector: Omar H. Jewell, Chicago, Ill.
- 271,085. Car-Coupling: John P. Lancaster, Goshen, Ind.
- 271,096. Condenser for Steam-Pumps: William A. Miles, Copake Iron Works, N. Y.
- 271,102. Railway-Crossing Barrier or Gate: William B. Morris, San Francisco, Cal.
- 271,106. Car-Coupling: John J. O'Connor and Ralph M. White, Wellsville, N. Y., assignors of one-third to Charles L. Gish, same place.
- 271,111. Car-Brake: J. Curtis Patterson, Philadelphia, Pa.
- 271,129. Traction-Engine: Cyrenius Rowe, Wales, N. Y., assignor of one-half to Edwin T. Allen, Philadelphia, Pa.
- 271,134. Portable Grain Elevator and Weigher: Mortimer Scanlan and John T. Hough, Chicago, Ill.
- 271,139. Blower: Wm. S. Sharpneck, Blair, Neb., assignor of one-half to Green Majors, same place.
- 271,151. Spring Car-Motor: George Stites, Robert Steel and Samuel Austin, Philadelphia, Pa., assignors to the United States Spring Car-Motor Construction Company, Camden, N. J.
- 271,176. Gung for Street-Cars: Charles H. White, New York.
- 271,179. Car-Coupling: Lafayette Wilkerson, Scipio, Ind.
- 271,189. Locomotive-Brake: Ebenezer Beals, Norwich, N. Y., assignor to Jane M. Guernsey, same place.

### Persian Railways.

Although a good deal has been heard at different times since the Shah's first visit to Europe about projected railways in Persia, nothing has been done toward their construction, and the statement recently made that work was about to be begun on one of them would scarcely justify notice were it not that it tallies with the official information received from our Minister at Teheran.

The line selected by the Persian Government for its first operations in laying down the iron road within the dominions of the King of Kings is not only the one which is most needed; it is that also which promises to be the most remunerative. The public announcement was to the effect that a railway is to be constructed between the capital. Teheran, and the Caspian port of Resht, and that the Persian Consul at Baku has been engaged in procuring navies at that place for the work. The explanation of the latter portion of this statement is that many of that class of laborers happen to be about to be disengaged at Baku, wither the railway from Tiflis is now on the point of completion; and the Persian Government is naturally anxious to secure their services before they have returned to their homes.

Resht, which is one of the most prosperous places in Persia, with a population of nearly 30,000 persons, is not a harbor itself. It lies on the southern side of a small lake, or rather bay, for it possesses an outlet 500 yards wide into the Caspian, and the Caspian steamers call at Enzelli to land passengers and merchandise. Enzelli is situated on a narrow spit of land, and is populated chiefly by Russian merchants and their workpeople. Communication is maintained by means of boats between Enzelli and Resht, and the Shah's steam-yacht is available for royalty and high dignitaries. The country round Resht is of striking fertility, and, indeed, the whole of the Province of Ghilan should,

under a provident administration, rank among the most productive regions in the world.

From Resht to Teheran the distance is about 225 miles, and the main road, after following for some distance the course of the Sefid Rud, turns in a due southeasterly direction through the ancient Persian capital of Kazvin to Teheran. We have yet to learn how the French engineers, to whom the task is intrusted, propose, on the resources of the Teheran Government, to overcome the difficulties of the Kharzan Pass, by which the Elburz range is crossed. This pass is 7,000 feet above the sea; but it presents no single difficulty along the route from the shores of the Caspian to the Persian capital.

There can be no doubt that the Shah's Government is at last taking a step in the right direction, but it should remember that the policy of improving the means of communication in the Provinces near the Russian frontier is one from which it may incur peril as well as derive benefit.

The construction of a railway from the Caspian to Teheran, following as it does the connection of the Black and Caspian seas by the same means, will hardly fail to produce a complete diversion of commerce in this region, from which Trebizond and Armenia generally will be the first to suffer. A false commercial policy on the part of either Russia or Persia will, however, mar this prospect, and a prohibitive tariff may deprive these lines of the traffic which can alone render them self-supporting.—*London Times*.

### Sleeping-Cars for the "Shore Line" Express.

THE Barney & Smith Manufacturing Company, of Dayton, Ohio, is building several sleeping and drawing-room cars for the Shore Line between New York and Boston. Two of the sleeping-cars were, recently on exhibition in the Boston and Providence Railroad station at Boston. The exterior is painted a rich dark brown relieved by gilding, and the inscription "Wagner Shore Line Sleeping Co.," and the car name "Boston" and "New London." One of the cars is finished in burl ash, and the other in black walnut. One has sixteen sections, the other twelve sections and a state-room containing one single and two double berths. All the berths are provided with spiral springs and hair mattresses, and the upper berths have a patent safety lock, which prevents it from locking in case of its shutting up when any one is occupying it, thus guarding against the danger of a person being confined beyond escape in case of a car going off the rails and turning over. The heating of the cars by the Baker & Smith apparatus, and the excellent ventilation, make them very comfortable in any weather. They are mounted on six-wheel trucks, with iron frames, yoked on the outside, thus preventing lateral motion in going around curves, and forty-two-inch Allen paper wheels are used, which ride remarkably easy and are very durable. The drawing-room cars are similar in style, and equally comfortable and well built. Their chairs are upholstered in green embossed plush, and the windows are very large.

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ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 6.]

NEW YORK, FEBRUARY 10, 1883.

[WHOLE No. 2,441.—VOL. LVI.]

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matters which the readers of such a paper as this are gratified to find within its columns.

## INCORPORATION.

THE Detroit, Indiana and St. Louis Railroad has been incorporated at Indianapolis, with a capital of \$2,000,000.

THE Chicago, Springfield and St. Louis Railroad, to run from Springfield, Illinois, to St. Louis, has been incorporated, which will give the Illinois Central Railroad Co. the shortest line from Chicago to St. Louis.

A CERTIFICATE of incorporation was filed on the 30th ult. of the Depot Street Railroad Company of Dayton, Ohio; capital, \$50,000. Also, articles of agreement of lease of rolling-stock between the Boston Car Trust Association and the Connotton Valley Railroad Company.

THE New Castle and Northern Railroad Company, capital \$250,000, was chartered at Harrisburg, Penn., on the 1st inst. James A. Negley, of Pittsburg, is president. The road is to run from near Lawrence Junction, Lawrence county, through Newcastle to Sharpsburg, Mercer county, a distance of twenty-five miles.

THE Western Union Telegraph Company, composed of Aaron Everest, B. P. Waggoner, Frank L. Everest, W. T. Fleming and W. W. Hetherington, of Atchison, filed articles of incorporation with the Secretary of State of Kansas on the 31st ult. Capital stock \$1,000,000. The above persons are directors for the first year.

ARTICLES of incorporation of the Helena Street Railroad Company were filed in the office of the Secretary of State of Arkansas on the 31st ult. The authorized capital is \$8,000, all paid up stock, divided into 320 shares of \$25 each. The officers are C. L. Moore president, W. R. Burke vice-president. Mr. Moore is of the house of W. E. & C. L. Moore.

ARTICLES of association have been filed in the office of the Secretary of State for the formation of a belt railroad at Terre Haute, Ind. The capital stock is \$100,000. Joseph Collett, C. Fairbanks, R. G. Kervey, R. G. Jenkes, I. B. Johns, Paul C. Davis and A. O. Johns are the directors. The corporation will be known as

the Manufacturers' Belt Railroad Company. The length of the road will be about four miles.

A CHARTER has been taken out for the Buffalo, Pittsburgh and Western Coal and Iron Company, which proposes to manufacture iron and steel, and to mine coal, iron ore and other minerals for its own consumption and sale in most of the counties of western Pennsylvania, in which valuable mineral lands have been secured. The headquarters of the company will be in Pittsburg. The names appearing in the charter are J. D. Clark, W. A. Schmidt, William Bunton, John Armstrong, West McMurray and John E. H. Kelly, and the capital stock is fixed at \$20,000. The men back of the incorporators are said to be the officers and heavy stockholders in the Buffalo, Pittsburg and Western Railroad Co., whose aim in this undertaking is to build up freight business for their road.

## CONSTRUCTION.

STREET cars commenced running in Chester, Penn., on the 30th ult.

THE section of the Mexican National Railway from Toluca to Maravatio was opened on the 6th inst.

THE people of Norristown, Penn., have in contemplation the construction of a street railroad in that place.

THE first through passenger train from New Orleans to San Francisco started from the former city on the 30th ult. The time between the two termini will be about 139 hours, or five days and nineteen hours.

ARRANGEMENTS are being perfected to finish the railroad from Rome, (Ga.) to Cedartown. This road was graded several years ago. It will connect with the East and West Railroad, now under construction to Birmingham.

THE Pittsburgh Chronicle says it is very probable a street car line will be established between the East End and Wilkinsburg in the spring. The company has been organized and will shortly ask Councils for the right of way along Penn avenue.

THE Woodstown and Swedesboro Railroad was opened for passenger, express and freight business on February 1. It extends from Swedesboro, N. J., the terminus of the Swedesboro branch of the West Jersey Railroad, in a southerly direction, passing through Woods-

town and connecting with the Salem branch of the West Jersey Railroad at Riddleton. The road is 11.2 miles long.

THE Coshocton and Straitsville division of the Connotton Valley railroad has been opened for traffic to Buena Vista, Coshocton county. Two trains will be run each way daily between Canton and Buena Vista, and as soon as a large bridge near Coshocton is completed the trains will run to that city.

The map of the proposed route of the Staten Island Rapid Transit Railroad has been filed in the Richmond County Clerk's office. The route begins at Peleter's Hotel, New Dorp, and runs near the Boulevard to Clinton and along the Shore road through Stapleton and Tompkinsville to New Brighton.

ENGINEERS of the Mexican Government have inspected the Mexican National Railway from Santa Caterina to Garcia, twenty-two kilometres, and accepted the same. F. A. Lister has assumed the duties of general superintendent, and E. A. Handy has taken charge of the construction department.

WORK on the Annapolis Short Line Railroad is to be commenced early this season. Ground for the depot at Annapolis was procured a few days ago. Mayor Martin, of Annapolis, is president of the company. The line, which will cross the Severn at Annapolis, is to enter Baltimore at the Scott and Cross streets terminus.

THE Montreal City Passenger Railway Company have arranged to run a line of road up Windsor street to St. Catharine street. This line will enable passengers to get on at Bonaventure street station and be taken anywhere along the present system. Should this be done the Post-office fares will commence and end there.

THE Atlantic and Pacific Railroad Company, which is laying track at the rate of 2½ miles per day, expects to reach the Colorado River before the 1st of April. The Southern Pacific Railroad Company expect to reach there within a few weeks. Thus within two months another transcontinental line of railroad will be open for travel.

ACCORDING to the official statement of the Mexican Department of Public Works there had been built in Mexico up to the close of 1882 about 2,305 miles of railway. The length of



track now operated is given as follows: Mexican Railroad (Vera Cruz), 356 miles; Mexican National, 432; Mexican Central, 596; Sonora Road, 313; Interoceanic Road, 186; Yucatan Railways, 60; Tehuantepec Road, 16.

THE New Orleans connection of the Southern Pacific Railroad, the last spike in which was recently driven, leaves the main line of the Southern Pacific Railroad at Deming, N. M., and runs to El Paso, Tex., where it crosses the Rio Grande. It extends thence by a circuitous route across Texas to San Antonio, connecting at that point with the Galveston, Harrisburg and San Antonio Railroad, and running thence, to a connection with the former Texas and New Orleans Railroad, and terminates at New Orleans.

It is announced that the arrangements which have so long been under way, looking toward extending the Lamoille Valley Extension from Swanton, Vermont, to Rouse's Point, have been completed and the necessary means for its building secured. At Rouse's Point a connection will be made with the Ogdensburg and Lake Champlain Railroad, forming a through line for all rail passenger and freight business to the Canadas, northern New England and the East. This road will probably be operated by the St. Johnsbury and Lake Champlain Railroad or the Ogdensburg and Lake Champlain, and a bridge charge will be made sufficient to pay all expense of operating and maintaining the same. The opening of this route will make a shorter rail connection for the Vanderbilt lines than any now in force to the points mentioned. It is expected that the new connection will be completed next August.

### ORGANIZATION.

THE directors of the Danville, Hazleton and Wilkesbarre Railroad Company for the year 1883 are: M. W. Kase, Jonathan M. Roberts, Peter C. Thompson, S. P. Kase, Charles Hentz, L. J. Abbett, Samuel Wheeler and William H. Glading. President, M. W. Kase.

At the recent annual meeting in Portland, Oregon, of the Oregon Short Line Railroad Company the following persons were elected directors: S. H. H. Clark, Thomas L. Kimball, Andrew J. Poppleton, D. P. Thompson, B. J. Pengra, M. S. Burrell and Ellis G. Hughes.

THE directors of the Fall River Railroad Company, recently elected, are: Charles F. Choate, H. A. Blood, George Marston, Fred. L. Ames, William Rotch, Morgan Rotch, J. S. Brayton, N. W. Turner and J. A. Beauvis; President, C. F. Choate; Treasurer, J. M. Washburn; Clerk, Wm. Rotch.

At a meeting of directors of the Montreal, Portland and Boston Railway Company, held in Montreal on the 1st inst., the following executive officers of the Company were re-elected for the current year: S. T. Willett president, A. B. Chaffee vice-president, M. S. Lonergan secretary and treasury.

THE George's Creek Coal and Iron Company have elected the following directors: A. H. Stump, Thomas Whitridge, Austin Jenkins, Thomas W. Levering, Francis White, J. J. Alexander, Samuel P. Townsend, Thomas

Deford, Richard D. Fisher. The office of the company is in Baltimore, Md.

At a meeting of the directors of the Denver and Rio Grande Railroad Company on the 30th ult., William L. Scott, A. J. Cassatt, Peter Geddes, and L. H. Meyer were admitted as directors in place H. A. Risley, J. W. Gullully, L. K. Bass and John E. Lundstrom, resigned. L. H. Meyer was elected first vice-president.

THE stockholders of the Lehigh and Eastern Railroad Company have elected the following board of directors: S. P. Kase, Francis W. Hughs, John C. Babcock, William H. Sterling, Samuel Wheeler, John H. Case, Homer Ramsdale, Francis Deweese, M. W. Kase, Leonard Abbett, Jeremiah Savage, William H. Glading, and John B. Champion. President, S. P. Kase.

At the annual meeting of the stockholders of the Belvidere Delaware Railroad Company, held in Philadelphia on the 5th inst., the following board of directors was elected: Strickland Kneass, H. H. Houston, Henry D. Welsh, Edmund Smith, John P. Wetherill, G. Morris Dorrance, Lewis Perrine, Hugh B. Ely and Charles Bartles. Strickland Kneass president, Hugh B. Ely secretary and treasurer.

At the annual meeting of the stockholders of the Fitchburg Railroad Company, held in Boston on the 30th ult., the following board of directors was chosen: Wm. B. Stearns, Seth Bemis, Robert Codman, Rodney Wallace, Franklin N. Poor, Charles T. Crocker, Charles A. Welch. The directors subsequently organized by the choice of William B. Stearns president, M. D. Benson treasurer and T. Whittemore clerk.

At the annual meeting of the Providence and Worcester Railroad Co., held at Providence, R. I., on the 5th inst., [the following were elected directors: George A. Leete, Gideon L. Spencer, Elijah B. Stoddard, Lyman A. Cook, Estus Lamb, Moses B. I. Goddard, Amos D. Lockwood, Frederick Grinnell, Joseph E. Davis, Oscar J. Rathbun, David K. Phillips, Josiah Lasell, Jonas G. Clark, Benjamin F. Thurston and Charles E. Whitin.

THE directors of the Framingham and Lowell Railroad Company, recently elected, are: S. N. Aldrich of Marlboro', James W. Clark of Framingham, H. A. Blood of Fitchburg, Jacob Nichols of Lowell, D. E. Harding of Mansfield, John Fletcher of Acton, Daniel Wetherbee of Acton, Frank A. Day of Boston, John H. Buttrick of Lowell, William O. Brown of Fitchburg, Charles F. Choate of Boston, S. B. Rogers of Sudbury, N. Thayer, Jr., of Lancaster.

THE first meeting of the New York and Boston Inland Railroad Company in Massachusetts was held in Boston on the 3d inst., at which Samuel E. Hale, of Keene, N. H., presided. The certificate of incorporation issued by the State of Massachusetts was accepted, and the company organized by the election of a board of directors, as follows: J. R. Bodwell, of Hallowell, Me.; Charles Burleigh, of Fitchburg; William Rotch, of Boston; Moody Merrill, of Boston; George Coon, of Boston; John H. Buttrick, of Lowell; Samuel L. Ham, of Peabody, Mass.; William H. Draper, of Milford, Mass.; H. E. Morgan, of Milford, Mass.; George W.

Johnson, of Milford, Mass.; Charles T. Sabin, of Montpelier, Vt.; Moses Webster, of Maine; H. A. Blood, of Fitchburg, Mass. This company is already organized in the States of Connecticut and New York.

At the annual meeting of the New York, Chicago and St. Louis Railroad Company, held in Cleveland, Ohio, on the 30th ult., the following directors were elected: Wm. H. Vanderbilt, Cornelius Vanderbilt, Augustus Schell, J. H. Devereaux, Stevenson Burke, D. W. Caldwell, James Tillinghast, H. McK. Twombly, W. C. Whitney, Frederick W. Vanderbilt, Anson Stager, J. H. Wade and Charles Hicox. Wm. H. Vanderbilt was elected president, D. W. Caldwell general manager, and F. W. Vanderbilt secretary-treasurer. The president says that the road will pay its fixed charges, and will be maintained as a separate organization. In due time it will enter the trunk-line pool. Through passenger trains will not be put on regularly until the road is thoroughly ballasted and terminal facilities arranged at both ends.

### Employment of Mules in Coal Mines.

UPWARDS of 1,700 mules employed by the Philadelphia and Reading Railroad and Coal and Iron Companies in connection with mining operations toil under ground daily. At many of the mines the mules do not see the light of day for a year at a time, and very often a mule spends ten years of his life under ground. The effect of daylight upon mules that have been so long in darkness is blinding. In many instances this blindness is permanent, the shock of sudden light being too great for the eyes; but it is the general rule that the mule staggers around in blindness for a few days, always, however, finding his way to the feeding bin, and taking true aim with his heels. At the end of the week eyesight returns, he brays with all the vigor of lung for which his kind is celebrated, elevating his tail as an accompaniment.

There are in round numbers 2,300 mules employed in all capacities by these companies. Many of them are taken up and down on the cage at the mines daily. In an economic point of view, they are said to be 33 per cent cheaper than horses, but that this is offset by the risk run in employing them. No wagon boy has been thoroughly initiated until he has felt the weight of a mule's heel.

In the mining region, where disputes of almost all kinds are settled by fisticuffs, the mule plays an important part in the miner's training for battle. He approaches the mule, which seems to be sleeping, and gives him a few taps on the rump with the bare knuckles as a reminder that he is wanted to take part in a sparring match. The mule responds, his blows are parried, and the sturdy miner gets in one or two from the shoulder which knock the animal out of time, the latter retiring with backed ears and looking deeply humiliated. A number of gentlemen prominently identified with the anthracite coal trade, who have been practical miners, relate this as an actual fact, and state further that a miner has so little respect for a mule that every time he has a row with his wife and she has the best of him he gets even by licking a mule, as that is about the nearest thing to a mad woman that he can get at.

## Statement of the Public Debt of the United States, February 1, 1883.

DEBT BEARING INTEREST.		
	Amount Outstanding.	Accrued Interest.
5 per cent funded loan of 1881, continued at 3½ per cent.....	\$81,328,750 00	\$711,626 56
3 per cent loan of July 12, 1882.....	291,444,350 00	2,185,832 62
4½ per cent funded loan of 1891.....	250,000,000 00	1,875,000 00
4 per cent funded loan of 1907.....	738,967,800 00	2,463,226 00
4 per cent refunding certificates.....	389,150 00	1,297 17
3 per cent navy pension fund.....	14,000,000 00	35,000 00

Aggregate of debt bearing interest.....\$1,376,130,050 00 \$7,271,982 35  
Interest due and unpaid.....2,433,368 57

## DEBT ON WHICH INTEREST HAS CEASED SINCE MATURITY.

	Amount Outstanding.	Interest due and unpaid.
4 to 6 per cent. old debt, 1837.....	\$57,665 00	\$64,174 81
5 per cent. Mexican indemnity stock, 1846-52.....	1,104 91	85 74
6 per cent. bonds, 1847-67.....	1,250 00	22 00
6 per cent. bounty land scrip, 1847-49.....	3,275 00	213 06
5 per cent. Texas indemnity stock, 1850-64.....	20,000 00	2,945 00
5 per cent. bonds, of 1858-74.....	7,000 00	875 00
5 per cent. bonds, of 1860-71.....	10,000 00	600 00
6 per cent. 5-20 bonds, 1862, called.....	361,550 00	5,297 15
6 per cent. 5-20 bonds, June 1864, called.....	50,400 00	994 40
6 per cent. 5-20 bonds, 1865, called.....	70,450 00	18,335 25
5 per cent. 10-40 bonds, 1864, called.....	280,100 00	41,926 40
6 per cent. Consol. bonds, 1865, called.....	358,200 00	11,917 38
6 per cent. Consol. bonds, 1867, called.....	789,300 00	108,676 65
6 per cent. Consol. bonds, 1868, called.....	245,150 00	20,413 11
6 per cent. loan, Feb. 8, 1861, matured Dec. 31, 1880.....	75,000 00	4,830 00
5 per cent. funded loan 1881, called.....	547,200 00	869 54
5 per cent funded loan 1881, called, continued at 3½ p.c. Oregon War Debt, March 2, 1861, matured July 1, 1881.....	7,675,900 00	46,315 18
6 per cent loan of July 17 and Aug. 5, 1861, matured June 30, 1881.....	7,800 00	1,558 50
6 per cent loan of July 17 and Aug. 5, 1861, continued at 3½ per cent, called.....	474,650 00	7,813 50
6 per cent loan of March 3, 1863, matured June 30, 1881.....	1,499,700 00	18,079 04
6 per cent loan of March 3, 1863, continued at 3½ per cent, called.....	149,600 00	4,011 13
1-10 to 6 per cent. Treasury notes, prior to 1846.....	1,396,550 00	15,273 55
1-10 to 6 per cent. Treasury notes, 1846.....	82,525 35	2,668 06
6 per ct. Treasury notes, 1847.....	5,900 00	200 60
3 to 6 per cent. Treasury notes, 1857.....	950 00	57 00
6 per ct. Treasury notes, 1861.....	1,700 00	99 00
7 3-10 per cent. 3 years' Treasury notes, 1861.....	3,000 00	364 50
5 per cent. 1 year notes, 1863.....	16,300 00	1,104 43
5 per cent. 2 year notes, 1863.....	41,115 00	2,067 85
5 per ct. compound interest notes, 1863-64.....	32,300 00	1,587 30
7 3-10 per cent. 3 years' Treasury notes, 1864-65.....	216,770 00	44,321 01
6 per cent. certificates of indebtedness, 1862-63.....	138,350 00	20,331 38
4 to 6 per cent. temporary loan, 1864.....	4,000 00	253 48
3 per cent. certificates, called.....	2,960 00	244 19
	5,000 00	394 31

Aggregate of debt on which interest has ceased since maturity.....\$14,632,715 26 \$448,919 50

DEBT BEARING NO INTEREST.		
Demand notes, 1861-62.....	\$59,250 00	
Legal tender notes, 1862-63.....	346,681,016 00	
Certificates of Deposit.....	12,490,000 00	
Gold certificates, 1863 and 1882.....	72,776,940 00	
Silver certificates, 1878.....	72,745,470 00	
Unclaimed interest.....		\$4,619 96
Fractional currency, 1862, 1863 and 1864 \$15,394,027 17		
Less amount estimated as lost or destroyed, act of June, 21, 1879.....	8,375,934 00	
		7,018,093 17

Aggregate of debt bearing no interest.....\$511,770,769 17 \$4,619 96

## RECAPITULATION.

	Amount Outstanding.	Interest.
Debt bearing interest in coin, viz:		
Bonds at 5 per cent, continued at 3½ per cent.....	\$81,328,750 00	
Bonds at 4½ per cent.....	250,000,000 00	
Bonds at 4 per cent.....	738,967,800 00	
Bonds at 3 per cent.....	291,444,350 00	
Refunding certificates.....	389,150 00	
Navy pension fund, 3 p.c.....	14,000,000 00	
	\$1,376,130,050 00	\$9,705,350 92
Debt on which interest has ceased since maturity.....	14,632,715 26	448,919 50
Debt bearing no int., viz:		
Old demand and legal-tender notes.....	\$346,740,266 00	
Certificates of deposit.....	12,490,000 00	
Gold & silver certificates.....	145,522,410 00	
Fractional currency.....	7,018,093 17	
	\$511,770,769 17	
Unclaimed interest.....		4,619 96
	\$1,902,533,534 43	\$10,158,890 38

Total debt, principal and interest to date, including interest due and unpaid.....\$1,912,692,424 81

## AMOUNT IN TREASURY.

Interest due and unpaid.....	\$2,433,368 57
Debt on which interest has ceased.....	14,632,715 26
Interest thereon.....	448,919 50
Gold and silver certificates.....	145,522,410 00
U. S. notes held for redemption of certificates of deposit.....	12,490,000 00
Cash balance available Jan. 1, 1883.....	143,258,218 51
	\$318,785,631 84
Debt, less am't in Treas'y Feb. 1, 1883.....	\$1,593,906,792 97
Debt, less am't in Treasury Jan. 1, 1883.....	1,607,543,676 84
Decrease of debt during the month.....	\$13,636,883 87
Decrease of debt since June 30, 1882.....	\$95,007,667 75
BONDS ISSUED TO THE PACIFIC RAILROAD COMPANIES, INTEREST PAYABLE IN LAWFUL MONEY.	
Central Pacific bonds, 1862-64.....	\$25,885,120 00
Kansas Pacific bonds, 1862-64.....	6,303,000 00
Union Pacific bonds, 1862-64.....	27,236,512 00
Cent. Branch Union Pacific bonds, 1862-64.....	1,600,000 00
West'n Pacific Bonds, 1862-64.....	1,970,560 00
Sioux City & Pacific bonds, 1862-64.....	1,628,320 00
	\$64,623,512 00
Totals.....	\$323,117 56

Interest paid by the United States, \$57,283,388.10; interest repaid by transportation of mails, &c., \$16,317,578.67; interest repaid by cash payments: 5 per cent net earnings, \$655,198.87; balance of interest paid by United States, \$40,310,610.56.

The foregoing is a correct statement of the public debt, as appears from the books and Treasurer's returns in the Department at the close of business, January 31, 1883.

CHARLES J. FOLGER,

Secretary of the Treasury.

## Forging a Rudder.

REFERRING to the forging of a new rudder for the steamer City of Berlin, to take the place of one that was carried away in a recent storm, ex-Alderman James Johnston, the superintendent of the Paterson Iron Company's Works is reported to have said:

"This is the biggest job of the kind we ever had, and there is only one other establishment in this country that would be anxious to get it to do. The shaft is forty feet long, the blade is twenty-five feet long, and the shape of the whole is so irregular that we have to put on counter weights every time it is handled, in order to run it over under the hammer. It will weigh about nine tons. The blade is made of sheet-iron plates, bolted on each side of the frame. The frame is made of iron, about eight inches square. The open space between the two plates forming the blade is sometimes filled in with resin. This, when melted and poured in, forms the most durable and solid filling. Some, however, use plaster of Paris. Others fill in the space with wood. Finally, others

perforate the plates and let water run in. This is probably as good as anything. The frame gives the rudder the desired strength. The plates are only to give a surface. A rudder six feet broad will steer a steamship 400 feet long."

While the reporter was listening, the building was lighted with the brilliant glow of a red hot bow of iron about fifteen feet long and eight inches square, just taken from the furnace. It was, in fact, a part of the outer rim of the curving rudder. In the meantime a corresponding piece projecting from the rudder shaft, which had likewise been heated, was brought from a furnace to be welded on. The two ends that were brought together were like two letter Vs pointing toward each other, thus:—> <. Then several men with great tongs took from the fire two small pieces also shaped like letter Vs, made to fit on the space between the two ends to be welded. These smaller pieces were held in place until a blow or two of the great hammer, giving a 4,000 pound stroke, caused the half melted masses to adhere. Next the whole mass was twisted and turned, and the blows rained faster and harder, until in a few minutes the weld was completed. A similar operation welded the other end of the bow to the post.

"A single false blow," said the superintendent, "might spoil the whole thing. A bit of dirt in it might make a flaw that would cost us thousands of dollars for damages. It takes a good mechanic to boss such a job, and we have to pay him good wages."

"How much do you pay him?"

"We pay that boss hammerman \$12 a day. He is the most important man in the shop."

## Cost of the Channel Tunnel.

THE probable cost of a Channel tunnel has always been a very obscure question, and Sir Edward Watkin has hitherto been very silent about it; but recently, according to the Pall Mall Gazette, he has felt himself in a position to give some figures on this particular point. He is making a tunnel, somewhere or other, through one of the hardest stratified rocks he knew. This cost £38 a yard, and that means roughly £65,000 a mile. The Channel tunnel would be about twenty-four miles. Instead, however, of taking the cost at £65,000 a mile let them assume that it would be £100,000 a mile, and that would represent a cost of £2,400,000 for the tunnel under the sea. That is his estimate of the cost of the actual tunnel. Next, he believed the estimate of £350,000 for the tunnel to connect the Chatham and Dover, and the Southeastern railways would not be exceeded. The entire cost of the work, therefore, came to only £3,000,000. With an original outlay of this modest kind Sir Edward was no doubt justified in describing the project as likely to be one of the most profitable ever undertaken—if profitableness were the only thing to be considered. But then in this modest estimate nothing is included for the cost of fortifications at the English end of the tunnel, every penny of which should fall upon those who have made them necessary.

ADVERTISE in the Railroad Journal.



# AMERICAN Railroad Journal

ESTABLISHED 1880.

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We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing for our  
columns any items of personal information, which may  
come to their knowledge, and are adapted to this de-  
partment. We aim to record all new railway enter-  
prises in the United States and Canada, and to note  
the progress of construction on all new roads and exten-  
sions; and we request all concerned in railway building  
to give us early information regarding the above, that  
our reports may be as complete as possible.

Subscribers are requested to report to our office any  
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Agricultural development, and Manufacturing news, by  
those who are familiar with these subjects, are especial-  
ly desired.

Entered at the Post Office at New York City as Second-Class  
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New York Saturday February 10, 1883.

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ROAD JOURNAL.

## PRINCIPAL CONTENTS.

Incorporation.....	121
Construction.....	121
Organization.....	122
Statement of the Public Debt of the United States, February 1, 1883.....	123
EDITORIAL:—	
Competitive Line Schedules.....	124
The Danger from Heart Disease in Railroad Train and Signal Men.....	124
Imports of Foreign Dry Goods at New York.....	125
Interlocking Switch and Signal Apparatus.....	126
Apparatus for Drying Lumber.....	127
Stock Exchanges and Money Market.....	128-130
Railroad and Canal Dividend Statement.....	132
Railroad Earnings—Monthly.....	134
Our Canadian Letter.....	136
Improved Railroad-Car Axles.....	138
Richardson's Car-Coupling.....	138
Sargent's Apparatus for Converting Motion.....	13
Electrical Railways in Ireland.....	14
The Locomotive Engineer.....	142
List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, etc.....	144

## COMPETITIVE LINE SCHEDULES.

It is rumored that the Vanderbilt fast train  
between New York and Chicago is to be ex-  
tended west over the Northwestern line to  
Omaha, and that from Omaha to San Francisco  
the Union and Central Pacific Companies will  
put on an extra train so as to reduce the time be-  
tween New York and San Francisco to four and  
a half days. If there be any truth in this  
(which is doubtful) it is simply an attempt on  
the part of the Vanderbilt and Dillon lines to  
procure more than their share of pooled busi-  
ness; and is the same kind of cutting as the  
Pennsylvania began in putting on its "Limited  
Express" between New York and Chicago. The  
Trunk Lines had combined to maintain passen-  
ger rates, but the time was left unrestricted.  
The Pennsylvania, having the shorter line, put  
on a train to make the entire 923 miles within  
twenty-eight hours; that is to say, instead of  
consuming two nights and a day on the journey  
it was to be done with one day and one night.  
Of course the New York Central and Hudson  
River had to follow this lead and put on a sim-  
ilar fast train.

There is a near limit to this kind of compe-  
tition, and it is not difficult to foresee that the  
time as well as the fares will have to be fixed by  
agreement of interested competing lines. It  
is too risky to the public, too tempting to the  
railroad officers, and too expensive to the tracks  
and rolling-stock to go without a break. The  
travel of business men between Chicago  
and the northwest is sufficient to justify  
two or possibly four fast trains a day; and a  
saving of a night on the cars is an object to  
some travelers, just as a saving of a day for  
business is of importance to others. The dif-  
ference between one night in a sleeper and two  
nights, is much greater than the difference be-  
tween four nights and five; or five nights and  
six.

The case is very different with Pacific  
travel. There are now (exclusive of the Isthmus  
steamers) two through lines to California, and  
a third (the Atlantic and Pacific) is to be open-  
ed within a few weeks. The route via Salt  
Lake is somewhat the shortest to and from  
Chicago and St. Louis; but if the Northern  
line puts on a train to shorten the time, the  
Southern will naturally do the same. As things  
are now the latter takes about twelve hours  
longer time from Kansas City; but with the  
opening of the thirty-fifth parallel line, the dis-  
tance being about the same, the time will  
doubtless be made so.

This brings up the question as to how fast  
through trains should be run. It is undoubtedly  
right that where there is load enough of through

passengers they should be taken with as few  
stops for local or "way" traffic as is consistent  
with safety and economy. The saving in time  
should be made, however, rather in avoiding  
delays than in high speed. There is a growing  
tendency in engine-men to make fast average  
speed by whirling down the descending grades  
at high velocities rather than by uniform and  
steady gait. This is reprehensible. The gov-  
erning element in timing trains should be, not  
the power of the engine, but the condition of  
the road-bed; and the attention of superin-  
tendents to this point is demanded.

But there are only a million of people, big  
and little, in California and Oregon; and the  
journey is, like a sea voyage, a thing of prepa-  
ration. Experience shows that the journey at  
twenty-two miles average per hour west of the  
Mississippi River is less fatiguing than is the  
average of near thirty-five miles on this side.  
This is true of all our swift trains that they  
tire the traveler appreciably. To say nothing  
of the risk and injury to the eyes, the maxi-  
mum of comfortable travel on a good track  
should not be allowed to average much over  
forty miles per hour.

## The Danger from Heart Disease in Rail- road Train and Signal Men.

BY S. S. HERRICK.

THE following was recently reprinted in the  
New Orleans *Picayune*, from the New York *Sun*.  
Its lesson appears to me to apply with even  
stronger force on land than on water, on ac-  
count of the much higher rate of speed attain-  
ed by railroad trains:

"The records of the United States Marine Hospital  
show that up to November 1 there were four cases during  
the year 1882 of pilots dying of disease of the heart while  
at the helm. To these must be added the case of Capt.  
W. B. Allen, who dropped dead on December 4, while  
bringing the steamer *Eolus* into Newport. He was one  
of the best known pilots on the Sound, and commanded  
at different times several large passenger steamers.  
Pilot Stephen Jones also fell dead at the helm of the  
pilot boat *Columbia* only a few days ago, when cruising  
outside of Sandy Hook. Fortunately, in all these cases,  
although there was more or less confusion, no disaster  
resulted.

"Surgeon General Hamilton referred to the danger in  
this respect in his evidence before the Congressional  
Committee on Shipping. The dangers arising from the  
loss of control of a crowded ferryboat or passenger  
steamer in the crowded waters in the vicinity of New  
York cannot be over-estimated, and the risk is daily run,  
with only one man at the helm, by scores of craft in the  
excursion season. It is not long since that two pilots of  
the Union Ferry Company died at the wheel of heart dis-  
ease, leaving their ferryboats temporarily without con-  
trol. No accident occurred, but the result may be  
imagined had they, while in a helpless condition and  
jammed with passengers, been run into by one of the  
great Sound steamers, for instance. Warned by the sec-  
ond death the Union Ferry Company have since then  
taken the precaution of having two men in the pilot-  
house. The second man is, however, merely a deck hand,  
who goes up from the deck after the ferryboat has left the  
slip.

"An old pilot said his attention had been called to sev-  
eral cases of heart disease among members of his craft of  
late. He did not recollect more than two or three cases

in the old times, twenty to thirty years ago. He knew of no reason why there should be an increase of the disease. The work of a pilot was hard and required temperate habits, and perhaps the increase in cases of heart disease was not proportionately greater than the increase in the number of pilots. If a steamer took a pilot off Sandy Hook and he died of heart disease, there were so many pilot boats that there would be little difficulty in getting another pilot. In a stormy night or in foggy weather, however, the veteran admitted that the danger would be great. 'There are scores of excursion and passenger steamers, tugs with barges, and all kinds of craft carrying passengers in the summer season,' he said, 'with only one man at the helm, and a law ought to be passed to prevent it. The large Sound and North River boats are forced to have more than one man at the wheel, as are the ocean steamers. Many of the ferry-boats in and around New York never have more than one at the helm, and this rule may be considered general so far as tugs are concerned.'

"An army surgeon said that it did not follow that because a man was thrown suddenly into an exciting scene he would die of heart disease if he was subject to it. He had known men who had gone through battles who had afterward died of heart disease in their beds. A pilot subject to heart disease might die in a sudden and exciting emergency, or he might create such an emergency by his death."

The question naturally arises, Why have we no similar accounts of heart failure among railroad men? The correct answer probably is, that railroad traffic is not subject to government supervision, as is the case upon the water-craft carrying the American flag. Railroad accidents are made family secrets, as far as possible, and this practice will continue until government investigation is provided by law. Investigation under legal authority would either accompany or briefly precede control, and this implies physical examination of those holding positions which involve human life, and rejection of all who fall below the standard.

It is not probable that the old plan of trusting to luck, or relying on divine Providence, according to one's religious bent, will much longer be tolerated by civilized communities; and the alternative will be legislative control or corporate regulations. If railroad companies prefer to keep the matter in their own hands, they must provide some system of prevention satisfactory to the most intelligent minds. It is greatly to the credit of the management of a few of the largest railroad corporations of this country, that they have already put in operation a plan for eliminating the most serious visual defects from certain classes of their employes. If their example should rapidly be followed, and a more extended system of physical examinations be practiced by their own medical officers, it is quite probable that railroad companies would not be interfered with in this matter.

Again, had the federal government provided a physical examination of the vital organs, instead of restricting control to the distinction of colors, the accidents related in the above article would never have happened. Their occurrence shows the necessity of control from some quarter, and upon water-craft this must of necessity proceed from the government. There can be no question of the right of government to impose suitable regulations for the protection of life and health, and the more communities become enlightened, the more the necessity is felt by the intelligent portion for the exercise of restraint upon the personal lib-

erty of their improvident fellows, where the general welfare is concerned. Were all equally intelligent, there would be no occasion for such control; and the same is the case with the most powerful, when they have the intelligence and fairness to be a law unto themselves.

To forestall preventable ills is one of the grandest achievements of organized power and and a fair index of civilization. Every one must either lead or follow. It is more honorable to lead than to follow: what shall be said of those who wait to be driven, and then hold back?

### Non-liability of Holders of Hypothecated Stock.

An interesting decision involving the question of the liability of the holders of hypothecated railroad stock for the debts of the insolvent railroad company was rendered in the United States Supreme Court on the 29th ult., in the case of Edward Burgess, plaintiff in error, against Jesse Seligman, et al., executors, in error to the Circuit Court of the United States for the Eastern District of Missouri. This was an action brought by the plaintiff in error against J. & W. Seligman & Co. as stockholders of the Memphis, Carthage and Northwestern Railroad Company under a statute of the State of Missouri, to recover a debt due him by the company. The plaintiff in his petition alleges that on November 5, 1874, judgment was rendered in his favor against the corporation by the District Court of Cherokee County, Kansas, for \$73,661, which remains unsatisfied; that in December, 1874, the corporation was dissolved; and that the defendants at the date of the dissolution and of the judgment were, and still are, stockholders of the corporation to the amount of \$6,000,000, on which there is due and unpaid one million dollars, and he demands judgment for his debt. Joseph Seligman, the principal defendant, answered, denying that the defendants were ever stockholders or subscribers to the stock of the corporation, and setting forth certain facts and circumstances (stated in the findings) under which the stock alleged to be theirs was merely deposited in their hands by the corporation, in trust for a temporary purpose by way of collateral security, to be returned when the purpose was accomplished. The cause was tried by the Court, and judgment rendered for the defendants on certain findings of fact, and the question presented here is whether the facts as found are sufficient to support the judgment. This Court holds that they are; that upon a careful examination there can be no doubt that the Seligmans held the stock in question as trustees and custodians by way of collateral security for themselves and the purchasers of the bonds, and that they are not liable for the company's debts. The judgment of the Circuit Court is affirmed with costs. Opinion by Justice Bradley.

At the National Exposition of Railroad Appliances, to be held in Chicago in May and June, it is proposed to have an "old curiosity shop," and the secretary is now trying to get information in the older parts of the country of such relics of the early days of railroads. Arrangements are to be made for the transportation of curiosities to Chicago and for their safe return.

### Imports of Foreign Dry Goods at New York.

THE Imports of Foreign Dry Goods at New York for the month of January, were:—

ENTERED FOR CONSUMPTION.			
	1881.	1882.	1883.
Manufs. of wool....	\$1,597,994	\$2,501,274	\$2,189,845
Manufs. of cotton...	2,597,217	3,406,104	2,875,758
Manufs. of silk.....	2,457,292	3,691,235	2,509,531
Manufs. of flax.....	1,171,385	1,673,197	1,194,186
Miscell. dry goods...	705,731	983,232	698,264
Total ent. for consumption.....	\$8,823,619	\$12,255,043	\$9,467,584

WITHDRAWN FROM WAREHOUSE.			
	1881.	1882.	1883.
Manufs. of wool.....	\$851,837	\$688,893	\$761,638
Manufs. of cotton...	1,143,641	765,622	1,132,411
Manufs. of silk.....	742,023	652,417	879,571
Manufs. of flax.....	863,820	600,823	609,044
Miscell. dry goods..	253,551	243,823	277,700
Total withdr'n from warehouse.....	\$3,854,872	\$2,951,578	\$3,660,364
Add ent. for con....	8,823,619	12,255,043	9,467,584

Total thrown on the market.....	\$12,678,491	\$15,206,621	\$13,127,948
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ENTERED FOR WAREHOUSING.			
	1881.	1882.	1883.
Manufs. of wool....	\$657,785	\$753,339	\$907,494
Manufs. of cotton...	799,533	829,691	1,027,451
Manufs. of silk.....	606,320	655,604	1,076,998
Manufs. of flax.....	683,066	587,987	511,203
Mis. dry goods.....	286,897	263,696	354,682

Total ent. for warehouse.....	\$3,033,606	\$3,089,777	\$3,877,728
Add entered for consumption .....	8,823,619	12,255,043	9,467,584

Total ent. at port....	\$11,857,225	\$15,344,820	\$13,345,312
------------------------	--------------	--------------	--------------

The total Imports of Foreign Dry Goods at New York for the year ending with January were:

ENTERED FOR CONSUMPTION.			
	1881.	1882.	1883.
Manufs. of wool...	\$10,408,182	\$12,861,522	\$14,220,609
Manufs. of cotton...	11,548,609	13,174,081	12,898,682
Manufs. of silk....	16,356,789	20,450,465	20,797,319
Manufs. of flax....	5,865,144	7,932,075	7,519,101
Mis. dry goods....	4,639,597	5,201,253	4,903,874

Total ent. for consumption.....	\$48,818,321	\$59,619,396	\$60,339,585
---------------------------------	--------------	--------------	--------------

WITHDRAWN FROM WAREHOUSE.			
	1881.	1882.	1883.
Manufs. of wool..	\$6,044,774	\$4,930,412	\$5,506,288
Manufs. of cotton...	3,342,767	2,340,550	2,879,440
Manufs. of silk....	4,190,906	3,165,302	4,013,429
Manufs. of flax...	3,212,065	2,552,796	2,497,650
Mis. dry goods....	1,347,733	1,337,641	1,241,826

Total withdrawn from warehouse.	\$18,138,245	\$14,326,701	\$16,138,633
Add entered for consumption ...	48,818,321	59,619,396	60,339,585

Total thrown on the market.....	\$66,956,566	\$73,946,097	\$76,478,218
---------------------------------	--------------	--------------	--------------

ENTERED FOR WAREHOUSING.			
	1881.	1882.	1883.
Manufs. of wool...	\$6,056,914	\$4,309,027	\$6,045,275
Manufs. of cotton...	3,182,096	2,323,912	3,348,369
Manufs. of silk....	4,201,817	3,333,458	5,115,559
Manufs. of flax....	3,222,652	2,499,149	2,713,682
Mis. dry goods....	1,869,164	1,379,644	1,642,643

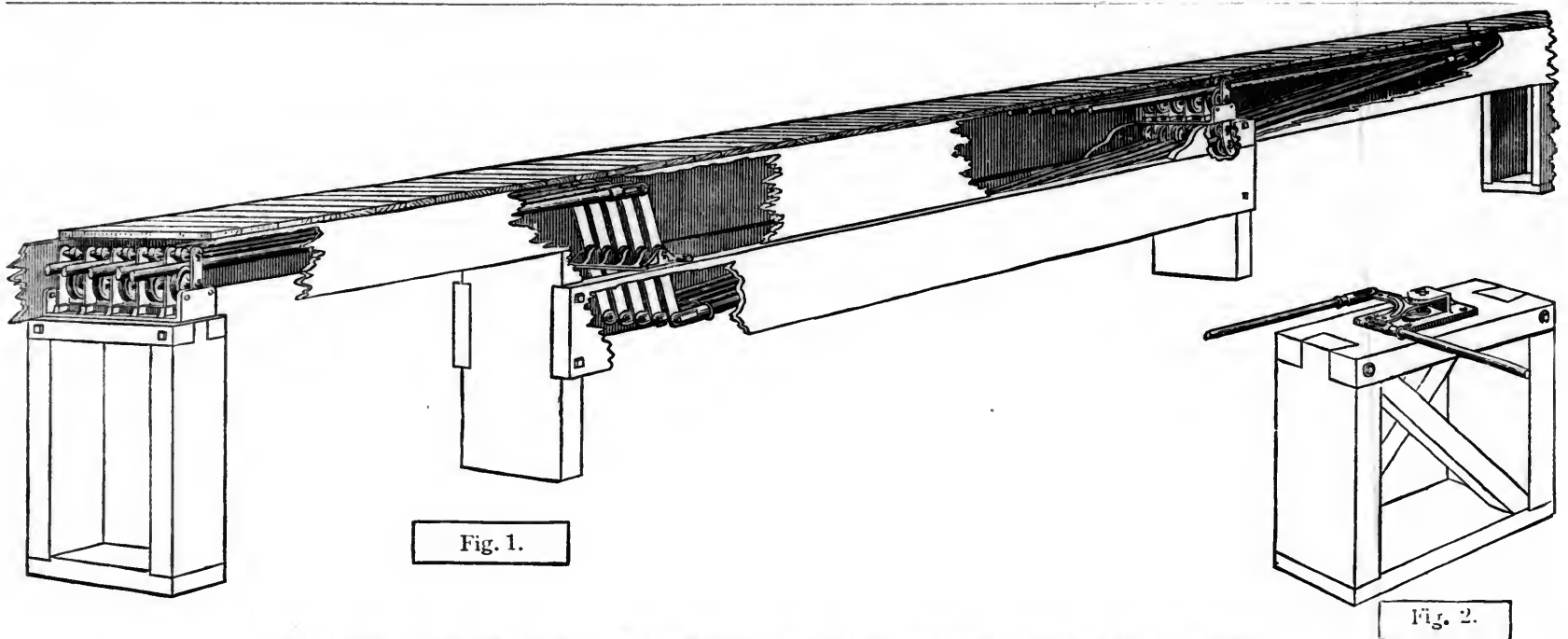
Total entered for warehouse .....	\$18,532,643	\$13,845,190	\$18,865,528
Add entered for consumption ...	48,818,321	59,619,396	60,339,585

Total ent. at port.	\$67,350,964	\$73,464,586	\$79,205,113
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THE largest body of fresh water on the globe is Lake Superior, 400 miles long, 160 miles wide at its greatest breadth, and having an area of 32,000 square miles. Its mean depth is said to be 900 feet and its greatest depth about 200 fathoms. Its surface is about 635 feet above the level of the sea.

THE exchange of three and a half per cent bonds into three per cents was resumed at the Treasury Department on the 1st inst.





CONNECTIONS IN POSITION, COMPENSATORS, AND BELL CRANK, WITH THE FOUNDATIONS.

### Interlocking Switch and Signal Apparatus.

[Continued from page 103.]

#### CONNECTIONS.

In an interlocking system it is requisite that the levers for a number of switches and signals should be concentrated in one frame, and the switchman is thus often of necessity placed a long way from some of the switches which he works, and the movements have to be conveyed to the switches by rods that must work accurately in all conditions of temperature or weather. In this system the rods are made of wrought iron pipes, carried between iron sheaves and rollers, resting on supports about eight feet apart. In the view accompanying, several lines of such rods are shown with the foundations to support them, and the boxing or trunking required to protect the rods from the weather and from being tampered with. The foundations are fixed in the ground to a depth of two or three feet.

To connect the sections of pipe securely together the sections are screwed firmly into the sockets usually employed, and for additional security at every joint a short iron bar is driven into the pipe, and after the pipe has been screwed together rivets through the pipe and the bar render it impossible for the joints to unscrew or break apart.

The expansion and contraction of long lines, under changes of temperature, produce alterations in the length which have to be guarded against, which is done by the self-acting compensating levers shown on Fig 1. The long rods are divided into approximate equal lengths and their ends are connected to the opposite ends of the compensating levers, and any alteration of length in one direction is counterbalanced by equal alteration of length in the other part, and the movement of the hand lever is transmitted unaltered in amount to the switch.

When the direction of the connection has to be changed, a bell crank is employed as shown in Fig. 2. This is to be fastened on a secure foundation, which is fixed in the ground to a depth of two or three feet.

#### FACING POINT LOCK.

In the progress of the development of Interlocking apparatus several dangers were found to exist when switches were worked from a distance, viz.: the danger of the switch not being completely shut, either from want of accuracy in adjustment of the working parts or from a stone or similar impediment finding its way between the rails; also the danger of a rod breaking or becoming disconnected without the knowledge of the switchman, in which case he might move the switch lever, and so put in operation all the appropriate locking and unlocking in the apparatus, without any corresponding movement of the points themselves having taken place; also the danger of a switchman carelessly or unwittingly moving switches while a train is going over them; and to meet such dangers the facing point lock was invented and in various adaptations has become an indispensable part of Interlocking apparatus.

Herewith is shown a switch with facing point lock, as designed by the inventor of the Cumings patent system. The first connecting bar of the switch is formed with two openings in it, and in front of this switch bar a long bolt slides in a suitable casting which is fastened on the cross-ties, so that when the switch has been completely moved into either of its two positions, the bolt may be pushed through the switch bar and thus lock the switch, and preventing it from being disturbed by the vibration of a passing train. A failure of the switch connections or an obstruction in the switch, will render it impossible for the bolt to enter the opening in the switch bar to lock the switch, and as the lock lever interlocks with the signal levers, no train can be signalled to approach until the switch is accurately adjusted and locked in its proper position.

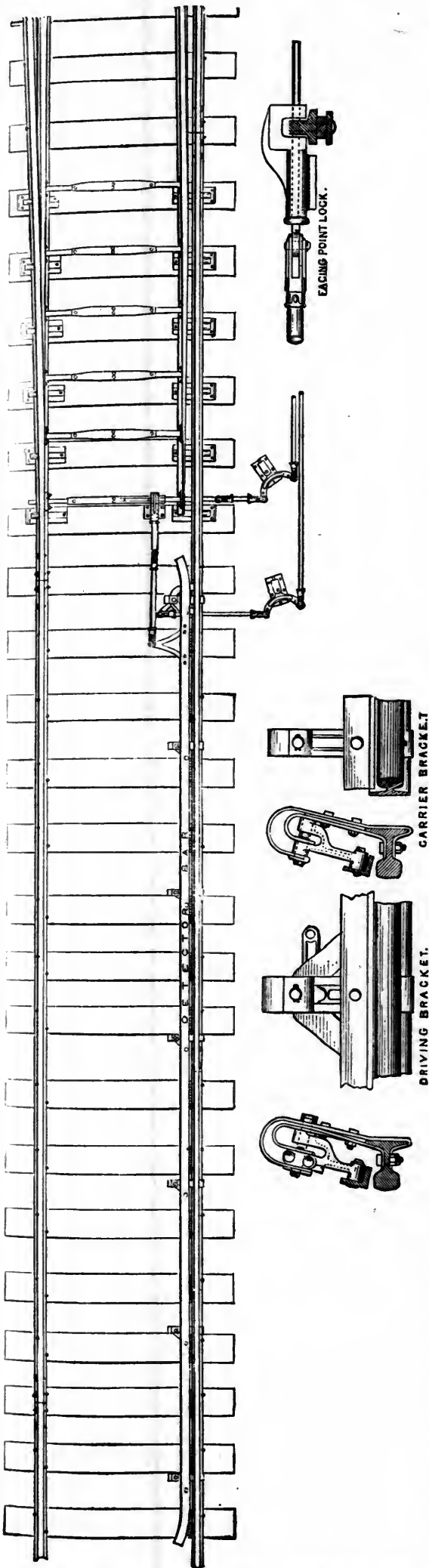
Connected to the switch bolt and moving longitudinally with it there is a bar called a Detector bar, or Safety bar, placed close to one of the rails of the track in front of the switch. The office of this Detector bar is to prevent the movement of the switch bolt while a train is passing.

The Detector bar is of angle iron, at least as long as the greatest distance between any two

pairs of wheels of any car used on the road; and is carried by short swinging levers supported on brackets fastened to the rail, and is connected to the switch bolt, so that when the switch bolt is drawn out of the switch bar to unlock the switch, or is returned into the switch bar to lock the switch, the Detector bar has also to make a longitudinal movement of several inches. The supports of the short swinging levers that carry the Detector bar are so arranged that the longitudinal movement of the Detector bar will cause the bar to approach the rail very nearly (as the swinging levers come towards a right angle to the rail), and then by the continued movement to recede from the rail. The enlarged views of the details of the brackets and swinging levers in above cut, show the bar in mid-stroke when it is nearest to the rail. The Detector bar comes so close to the rail in making the movement that any object between them would prevent the movement being made.

As the Detector bar is longer than the greatest distance between any two pairs of wheels, it follows that from the time at which the first pair of wheels of a train comes past the bar, to the time at which the last pair of wheels passes, the Detector bar cannot be moved; and as the bar is rigidly connected with the switch bolt, it is impossible for a switchman to even move the bolt while a train is passing the Detector bar. Thus, while this facing point lock is in use, a switchman has, in order to adjust a switch for a train to pass over it, first to put the switch in proper position, and then to throw the switch bolt. When these two operations are complete—and not before—he can give the signal to allow an approaching train to pass over the switch. The brackets which support the Detector bar and its swinging levers are made of steel, and from their shape and inclined position, will spring down, if fouled with wheels passing, and return to position again without injury.

The Detector bar in this improved arrangement moves so much easier than in the original arrangement, wherein the Detector bar had to be lifted up and thrown forward or backward, that it has been found perfectly practicable to

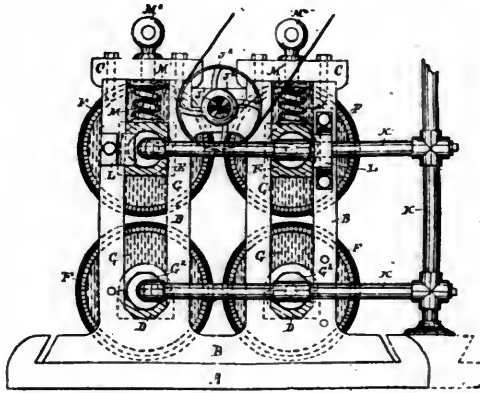


FACING POINT LOCK AND DETECTOR BAR.

move two such facing point locks at one time with same lever, thus saving in the case of a

pair of cross over switches, the expense of one hand lever and the connections. This arrangement will also allow the Detector bar to serve as a guard rail for a frog, and thus permit a very close proximity of frogs and opposite switches requiring a facing point lock, and has been found a convenience in crowded yards.

#### Apparatus for Drying Lumber.



An invention of great use has been made and patented recently by Albert Thalheimr, of Reading, Pennsylvania. The invention constitutes a new and useful improvement in apparatus for drying lumber. It relates more particularly to the drying of thin lumber or veneers, and the means adopted to retain them in a straight and unwarped condition. The improvement is believed to offer a simple and inexpensive mode of securing the desired end, seeing that it does away with extensive, costly and dangerous dry-houses, reduces the capital necessarily locked up in great stocks of lumber, and insures the production of thin lumber which is level, straight and out of wind.

The construction of the apparatus is as follows: Twin housings are finished between jambs to receive bearing-boxes, of which the lower are half boxes and the upper whole boxes. Both are bored to fit journals or necks of rolls. The upper boxes may be supported from or poised upon steel-yards, as is common in rolling-mills, or they may rest upon lugs or pins in the housing-jambs, so arranged as to let the upper roll down within the minimum distance it is intended to come to the lower roll. The housings are preferably cast double, or tinned. The foundations are cast either complete for each pair or lengthened out to receive as many couples as it is desired to use for the purpose of drying. The rolls are preferably built up, but may be cast complete. At one side of the housings, and on the projected necks of the upper rolls, are placed spur-gearing, and intermediate to the rolls and above the line of their centers, so as to permit their adjustment, are placed a spur-pinion and band-pulley shaft having bearings in a box forming part of the twin housing, the pinion being in gear with the wheels on the roll-necks and the band-pulley suitably connected with a revolving shaft. On the side of the housing opposite to the gearing the necks of the rolls are counterbored to receive a stuffing-box gland, through which is passed a steam-delivery pipe, making the passage steam-tight by packing in the usual manner. This pipe may be connected with both sets of rolls (top and bottom), the connection with the main or boiler being at such distance

from the center of the rolls as will admit of the necessary vertical movement of the top rolls without disturbing the connection. To give stability the main is carried down to the floor and the end secured in a foot; and to prevent the steam (by reaction) driving the connection out of the roll-necks, a yoke is placed over the center of the horizontal pipes, and by means of set-screws therein brought in contact with the elbow and to retain the same in place. The rolls, when steam-heated, have solid disk-heads, except when bored for in-ress and egress of the steam, while the heads of the rolls which are gas-heated are provided with openings between the rim and journals for the admission of air to support the combustion of gas at the burners. For moderately green lumber live steam is used in all of the rolls, and for very green the steam is replaced with gas. Sometimes a combination of both steam and gas produced the desired result. For drying moderately green lumber, one set of housings and rolls running at a slow speed will be ample; and if it is desired to have the drying proceed more rapidly, additional sets of the housings and rolls are put in the train. The lumber may then be passed through at a greater speed. In this way, having a sufficient number of rolls *en train*, the lumber may be received direct from the saw at the mill, and be delivered from the train perfectly seasoned and in a workmanlike condition. The lumber while passing through the rolls has a certain compressive strain put upon it; and the steam passing into the rolls, or the gas burning therein, an intense drying-heat is obtained, which evaporates the watery particles exuded by the pressure, at the same time thoroughly heating the lumber, which being firmly held while this process is being performed, it results in producing an unexceptionably fine-conditioned article of lumber.

#### Sly Trick of a Relief Horse.

ANY one desirous of verifying the following story need only to take a stand at the foot of Chardon street, where the relief horses are stationed, and watch Lady Knights' manoeuvrings. Lady Knights is a veteran on the relief corps of horses, having served in that capacity some eight or ten years, and it is quite evident that during that time she has learned a thing or two by observation, if in no other way. Part of the day two horses are kept for the purpose of helping the cars up the hill, and they alternate, or are supposed to, in their duties. But Lady Knights is a sly boots, and needs a vigilant eye to see that she doesn't cheat. When the relief horse gets to Bowdoin square it is unhitched and goes back to the foot of the hill, taking its place next to the curbstone, which indicates to the next car that the outside horse is to help pull up the hill. So accustomed have the horses become to this routine that they seem to go through it mechanically, and are often left to go down alone and take their places. Now this is one of Lady Knights' favorite tricks: When the other horse comes down and stations himself in his proper place she walks up just ahead of him and then backs herself in between Old Stupid and the curbstone. The consequence is Old Stupid sometimes pulls three or four successive cars up the hill, and would probably keep on pulling for the rest of the day did not the attendant come to the rescue. The look of injured innocence which Lady Knights assumes when the man snakes her out from next the curb and puts her in her proper place is funny.—*Boston Journal*.



## THE STOCK EXCHANGES AND MONEY MARKET

## New York Stock Exchange.

Closing Prices for the week ending Feb. 6.

	W. 31.	Th. 1.	F. 2.	Sat. 3.	M. 5.	Tu. 6.
Adams Express.....	135	135	135	135	135	135
Albany and Susq. ....						
1st mortgage.....						
2d mortgage.....						
American Express... 91 1/2		92 1/2				90 1/2
Burl. C. R. & Nor. ....						
1st mortgage 58...					100 1/2	
Canada Southern .. 68 1/2	68 1/2	66 1/2	66 1/2	67 1/2	67 1/2	67 1/2
1st mortgage guar 95 1/2	95 1/2	95 1/2	95	94 1/2	91 1/2	
Central of N. Jersey 72 1/2	72 1/2	72 1/2	71 1/2	72 1/2	72 1/2	
1st mort. 1890.....						
78, consol. ass. .... 110 1/2	110 1/2		110	110		
78, convertible ass. 110 1/2	110 1/2		110			
78, Income.....						
Adjustment.....			106			
Central Pacific..... 83 1/2	83 1/2	82 1/2	82 1/2	82 1/2	82 1/2	
68, gold.....		113 1/2				
1st M. (San Joaq) ..						
1st M. (Cal. & Or.) ..						
Land grant 68.....					105 1/2	
Chesapeake & Ohio. ....		22 1/2	22 1/2	22		
1st pref. ....			32 1/2	31 1/2	31	
2d pref. ....	24 1/2		25		24	
1st mort., series B 91	91	90 1/2	90 1/2	90 1/2	90 1/2	
Chicago and Alton. 135	136		137	135		
Preferred.....						
1st mortgage.....		113			117 1/2	
Sinking Fund.....	114	113	113 1/2			
Chi., Bur. & Quincy 123 1/2	122 1/2	122	121 1/2	122 1/2	120 1/2	
78, Consol. 1903... 127 1/2	127 1/2				127	
Chi., Mil. & St. Paul 106 1/2	105 1/2	104 1/2	102 1/2	103 1/2	101 1/2	
Preferred.....	120 1/2	120 1/2	119 1/2	119	118	
1st mortgage, 88... 134						
2d mort., 7 3-108... 122 1/2	122 1/2					
78, gold.....	127	127				
1st M. (La. C. div.) 119	119				117 1/2	
1st M. I. & M. div. ....						
1st M. (I. & D. ext.) ..						
1st M. (H. & D. div.) ..						
1st M. (C. & M. div.) ..		125			125	
Consolidated S. F. ....			124			
Chi. & Northwestern 131 1/2	130	128 1/2	130 1/2	132 1/2	131 1/2	
Preferred.....	145 1/2	145	145 1/2	147	146	
1st mortgage.....						
Sinking Fund 68... 145 1/2						
Consolidated 78... 131						
Consol. Gold b'ds .. 125 1/2	125 1/2				125 1/2	
Do. reg.....	125 1/2					
Chi., R. Isl. & Pac. 124	123	122 1/2	122 1/2	123 1/2	123 1/2	
68, 1917, c.....			124 1/2	124 1/2	124 1/2	
Clev., Col., Cin. & Ind. 80	78 1/2	78 1/2	78	77 1/2		
1st mortgage.....						
Clev. & Pittsburg gr. ....		141	140 1/2			
78, Consolidated.....						
4th mortgage.....		110 1/2				
Col., Chi., & Ind. Cent 1st mortgage.....			4		4	
2d mortgage.....						
Del. & Hud Canal. 107 1/2	108	108	107 1/2	107 1/2	107 1/2	
Reg. 78, 1891.....		114			114	
Reg. 78, 1884.....						
78, 1894.....	117					
Del., Lack. & Western 125 1/2	125 1/2	124 1/2	122 1/2	123	122 1/2	
2d mortgage 78... 125 1/2						
Consol. 1907.....						
Erie Railway.....						
1st mortgage.....						
2d mort. 58, ext. ....						
3d mortgage.....						
4th mort. 58, ext. ....						
5th mortgage.....						
78, Consol. gold.. 130 1/2						
Great West. 1st mort 100 1/2						
2d mortgage.....			100 1/2			
Hannibal & St. Jo. ....		41 1/2		40	40	
Preferred.....	86	85 1/2		84 1/2	80	
88, Convertible.....					108	
Houston & Tex. Cen 1st mortgage.....	108 1/2	108 1/2		103	108	
2d mortgage.....	121					
Illinois Central... 147	146	145 1/2	145 1/2	146 1/2	146 1/2	
Lake Shore & Mich So 110 1/2	109 1/2	108 1/2	109	110 1/2	109 1/2	
Consol. 78.....				127		
Consol. 78, reg. .... 126				123 1/2		
2d Consolidated.....						
Lsh. & W. B. con. ass 118						
Long Dock bonds... 118						
Louisville & Nash. 55 1/2	57	56 1/2	55 1/2	56 1/2	55 1/2	
78, Consol. reg. ....						
Manhattan.....					46	
1st pref. ....						
Met. Elevated..... 81	80			81 1/2		
1st mortgage..... 93 1/2	93	98		98	98	
Michigan Central. 96 1/2	96 1/2	95	94 1/2	96 1/2	95 1/2	
78, 1902.....	125 1/2					
Morris & Essex..... 122 1/2		122	122	122		
1st mortgage.....					135 1/2	

2d mortgage.....						
78 of 1871.....						
78, Convertible..... 122 1/2	122					
78, Consolidated..... 125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	
N. Y. Cen. & Hud. R. 126	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	
68, S. F. 1883.....						
68, S. F., 1887..... 103	107 1/2					
1st mortgage..... 130	130					
1st mortgage, reg. ....						
N. Y. Elevated.....						
1st mortgage.....						
N. Y. & Harlem.....						
Preferred.....						
1st mortgage.....						
1st mortgage, reg. ....						
N. Y. Lake Erie & W 39 1/2	38 1/2	38 1/2	37 1/2	38	37 1/2	
Preferred..... 80 1/2	80			79	79 1/2	
2d Consolidated..... 97 1/2	96 1/2	96 1/2	96 1/2	96	96 1/2	
New 2d 58 fund.....						
N. Y., N. Hav'n & Hart 170	170 1/2		172			
North Mo. 1st mort .. 119						
Northern Pacific... 49 1/2	49 1/2	48 1/2	47 1/2	43 1/2	47 1/2	
Preferred..... 85 1/2	84 1/2	84	83 1/2	84 1/2	81	
Ohio & Mississippi. ....		31 1/2	31	32	31 1/2	
Preferred.....						
2d mortgage..... 123						
Consolidated 78... 115 1/2						
Consol. S. Fund..... 116						
Pacific Mail S. S. Co .. 40 1/2	41 1/2	40 1/2	41	41 1/2		
Pacific R. R. of Mo. ....						
1st mortgage..... 105						
2d mortgage..... 110						
Panama.....						
Phila. & Reading... 55 1/2	54 1/2	54 1/2	54 1/2	54	53 1/2	
Pitts., Ft. W. & Chi. g'd 136	136		136			
1st mortgage.....						
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car .. 121			120 1/2	121 1/2		
Quickkill'r Min'g Co .. 8			8			
Preferred..... 40	40					
St. Louis & San Fran 31 1/2	31 1/2	30	30 1/2	30 1/2	30 1/2	
Preferred..... 51 1/2	51	50 1/2	50	50	50 1/2	
1st Preferred..... 93					91 1/2	
St. L., Alt'n & T. H. 68 1/2	68 1/2	63 1/2	61	64	65	
Preferred..... 97	93 1/2				97 1/2	
1st mortgage.....						
2d mort. pref. ....						
Income bonds.....						
St. L., Iron Mt. & S. 1st mortgage.....						
2d mortgage..... 107 1/2	107 1/2	107 1/2	107 1/2			
Toledo and Wabash. ....						
1st mortgage..... 100 1/2	100 1/2					
2d mortgage..... 100 1/2	100 1/2					
78, Consolidated.....						
St. Louis Division ..						
Union Pacific..... 99 1/2	98 1/2	97 1/2	96 1/2	95 1/2	94 1/2	
1st mortgage..... 113 1/2	113 1/2	114	113 1/2	114	113 1/2	
Land Grant 78... 110 1/2	110 1/2	110				
Sinking Fund 88... 118 1/2						
United States Ex..... 65					62 1/2	
Wabash, St. L. & Pac 33 1/2	32 1/2	32	31 1/2	31 1/2	31 1/2	
Preferred..... 53 1/2	53 1/2	52 1/2	52 1/2	52 1/2	51 1/2	
New mort. 78... 124						
Wells-Fargo Ex..... 124					123	
Western Pacific b'ds .. 112 1/2						
Western Union Tel. 32 1/2	81 1/2	80 1/2	80 1/2	80 1/2	81 1/2	
78, S. F. conv., 1900 .. 117						

## Boston Stock Exchange.

Closing Prices for the Week Ending Feb. 6.

	W 31.	Th. 1.	F. 2.	Sat. 3.	M. 5.	Tu. 6.
Atch., Top. & San. Fe. 8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2
1st mortgage..... 121 1/2						
Land Grant 78... 113						
Boston & Albany... 174	174	174	174	175	175 1/2	
Boston and Lowell. ....					100	
Boston & Maine..... 155	155 1/2					
Boston & Providence 162	162					
Bos'n, Hart. & Erie 78						
Burl. & Mo. R. L. G. 78						
Burl. & Mo. R. in Neb 68, exempt.....						
48.....						
Chi., Burl. & Quincy 123	122	121 1/2	121 1/2	121	121 1/2	
Cin., Sand & Clev (\$50) .. 23					23	
Concord (\$50)..... 102					102	
Connecticut River. ....						
Eastern..... 40	40	40	42	45	47	
New 68, Bond..... 110 1/2	110 1/2					

Fitchburg.....			120		120	
N. Y. & New England 48 1/2	47	47 1/2	46	46	48	
78..... 115	115 1/2					
Northern N. H. .... 111	111					
Norwich & Worcester ..						
Ogden & Lake Cham .. 30						
Old Colony..... 137	136 1/2					
Ph., Wil. & Balt. (\$50). 63	62				62	
Portl'd, Saco & Ports 112 1/2				112 1/2		
Pueblo & Ark Val 78 .. 113 1/2						
Pullman Palace Car 124 1/2			121 1/2		120	
Union Pacific..... 100	99	97 1/2	96 1/2	95 1/2	94 1/2	
68.....						
Land Grant 78... ..						
Sinking Fund 88... ..						
Vermont & Mass... 131						
Worcester & Nashua ..					57 1/2	
Cambridge (Horse)... 95	96	95 1/2				
Metropolitan (Horse) 73		73				
Middlesex (Horse)... 101		101				
Cal. & Hecla Min'g Co 242	242	242	243	243 1/2	243	
Quincy..... 52	50	49 1/2	50 1/2	51	50 1/2	

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Feb. 6.

	W. 31.	Th. 1.	F. 2.	Sat. 3.	M. 5.	Tu. 6.
Allegh'y Val. 7 3-108				122½		
78, Income.....					48	
Buff., Pitts & West.	18	17½	17¼	17	16½	16½
Camd'n & Am. 68, '83						
68, 1889.....		112				
Mort. 68, 1889.....	112			112		
Camden & Atlantic.						
Preferred.....						
1st mortgage.....						
2d mortgage.....						
Catawissa.....		23				
Preferred.....						
2d pref.....		55			55	
78, new						
Del. & Bound Brook						
78.....	123¾	123½				
Elmira & Williamspt						
Preferred.....						
Hunt. & B. Top Mt.						
Preferred.....						27½
2d mortgage.....						
Lehigh Navigation.	39½	39½		39	38¾	39
68, 1884.....		102¾				
Gold Loan.....	111	111	111½	111¼	111	
Railroad Loan....	116					
Conv. Gold Loan....						
Consol. Mort. 78.				116¾		
Lehigh Valley.....	65	64¾	64¾	64¾	64¾	65
1st mort. 68, coup						
1st mort. 68, reg..						
2d mort. 78.....						
Consol mort. 68...			120½	121		
Consol.mtg.68,reg						
Little Schuylkill....						59
Minehill&Sch.Hav'n	62			62	63	63
North Pennsylvania	67	67	67			
1st mortgage 68...			103			
2d mortgage 78...						
Genl. mtg.78,coup						
Genl. mtg. 78, reg						125
Northern Central..	55	55			54¾	
58.....				100		
Northern Pacific...	49½	49	48¾	47¾	48¾	48
Preferred.....	85½	84¾	84	83¾	84½	83¾
Pennsylvania R. R.	60½	60½	59¾	59¾	59¾	60¾
1st mortgage.....						
Gen'l mort.....						
Gen'l mort reg....						
Consol. mort. 68.						
Consol. mort. reg					120	120
Pa. State 58, new...		117	117			
do 48, new.....		117	117			117
do 3½8, 1912....						
Phila. & Reading...	27¾	27¾	27½	27½	26¾	27
1st mortgage 68...						
78 of 1893.....	120					
78, new convert..	76¾		76			75
Consol. mort. 78.			125½	125½		
Consol. mort. reg.						
Gen'l mort. 68...	94¾	94¾	94¾		94¾	94¾
Def. Income bonds				28	28	
Philadelphia & Erie			20			
1st mortgage 58...						
2d mortgage 78...						112½
Pittsb., Cin.&St.L.78			120¾			
Pitts.,Tit.&Buff. 78,	98		94½		94	94
Schuylkill Navi't'n.						
Preferred.....				131½	13½	13½
68, 1897.....			106¾			68
68, 1907.....						89¾
United Co. of N. J.		188¾			190	190
Hestonville, (Horse)						
Chestnut&Walnut).					00	

## Baltimore Stock Exchange.

Closing Prices for the Week Ending Feb. 5.

Tu. 30. W. 31. Th. 1. F. 2. Sat. 3. M. 5.

Baltimore & Ohio...	109 1/4	109 1/4	109 1/4	109 1/4	109 1/4	109 1/4
6s, 1885.....	50	50	50	50	50	50
Central Ohio (\$50)...	109 1/4	109 1/4	109 1/4	109 1/4	109 1/4	109 1/4
1st mortgage.....	109 1/4	109 1/4	109 1/4	109 1/4	109 1/4	109 1/4
Marietta & Cin. 7s.....	131	131	131	131	131	131
1st mortgage, 7s.....	101 1/4	101 1/4	101 1/4	101 1/4	100 3/4	101
2d mortgage, 7s.....	101 1/4	101 1/4	101 1/4	101 1/4	100 3/4	101
3d mortgage, 8s.....	54 1/4	54 1/4	54 1/4	54 1/4	54 1/4	53 3/4
Northern Cen. (\$50)...	55 1/4	55	55	55	54 1/4	54 1/4
2d mort. 6s, 1885.....	55 1/4	55	55	55	54 1/4	54 1/4
3d mort. 6s, 1900.....	112 1/4	113	113 1/2	113 1/2	113 1/2	113 1/2
6s, 1900, gold.....	112 1/4	113	113 1/2	113 1/2	113 1/2	113 1/2
6s, 1904, gold.....	120	120	120	120	120	120
Pitts. & Connells, 7s.....	51	52	52	51 1/4	51 1/4	51 1/4
Virginia 6s Consol.....	51 1/2	51 1/2	51 1/2	51 1/2	51 1/2	51 1/2
Consol. coupons.....	40	40	40	38 1/4	40	40
10-40 bonds.....	49	49 1/4	49 1/4	48 1/4	48 1/4	48 1/4
Def'd Certificates.....	49	49 1/4	49 1/4	48 1/4	48 1/4	48 1/4
New 3s.....	49	49 1/4	49 1/4	48 1/4	48 1/4	48 1/4
Western Maryland.....	110	110	110	110	110	110
1st M., end. by Balt.....	110	110	110	110	110	110
2d M., do.....	110	110	110	110	110	110
3d M., do.....	110	110	110	110	110	110
1st M., unendorsed.....	110	110	110	110	110	110
2d M., end. Wash Co.....	110	110	110	110	110	110
2d M., preferred.....	110	110	110	110	110	110
City Passenger R. R.....	110	110	110	110	110	110

## London Stock Exchange.

Closing Prices—

Jan. 12. Jan. 19.

Baltimore and Ohio 5s, 1927.....	107	109	107	109
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	111	113	111	113
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs.....	90	91	90 1/4	91 1/4
Do. 1st mort. 6s, 1895-98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds.....	118	120	118	120
Do. Con. M. sp. c., till '83 after 6p. c. 117	119	119	117	119
Illinois Central \$100 shares.....	148 1/4	149 1/4	148	149
Do. S. F. 5s, 1903.....	105	107	105	107
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 94	96	96	94	96
Do. capital stock \$100 shares.....	56	57	58 1/4	59 1/4
N. Y. Cen. & Hud. R. mort. bonds.....	130	135	130	135
Do. \$100 shares.....	130	131	131	132
Do. mort. bonds (stg.).....	119	121	119	121
N. Y. Lake Erie & West. \$100 shs.....	40 1/4	41 1/4	41 1/4	41 1/4
Do. 6 p. c. pref. \$100 shares.....	84	86	84	86
Do. 1st Con. Mort. bonds (Erie).....	128	132	128	132
Do. do. Funded Coupon bonds.....	125	130	125	130
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. do. Funded Coupon bonds.....	97	99	97	99
N. Y., Pa. & Ohio 1st mort. bonds.....	51	52	55 1/4	56 1/4
Do. Prior Lien bonds (sterling).....	103	106	103	106
Pennsylvania \$50 shares.....	61 1/4	62 1/4	61 1/4	62 1/4
General Mortgage.....	121	123	121	123
Phil. & Erie Gen. mort. 6s, 1920.....	114	116	114	116
Philadelphia & Reading \$50 shs.....	28 1/4	28 3/4	29 1/4	29 3/4
General Consol Mortgage.....	115	117	115	117
Do. Improvement Mortgage.....	104	106	104	106
Do. Gen. Mtg. 74, ex-def'd coup. 94	96	96	94	96
St. L. Bridge 1st mort. gold bond.....	122	124	122	124
Do. 1st. pref. stock.....	92	96	92	96
S. P'fic of Cal., 1st mort 6s, 1905-6.....	107	108	107	108
Union Pacific 1st mtg. 6s, 1896-9.....	116	118	116	118
Wabash, St. L. & P. \$100 shares.....	35 1/4	36 1/4	36	37
Do. \$100 pref shares.....	55 1/4	56 1/4	57 1/4	58 1/4
Do. gen. mort. bonds.....	81	83	82	84

## AMERICAN RAILROAD JOURNAL.

## Financial and Commercial Review.

WEDNESDAY EVENING, FEBRUARY 7, 1883.

RATES for money on call on stocks this morning, and down to 3 o'clock, were 3 1/2 @ 4 per cent; on Governments, 2 to 3 per cent.

The posted rates for foreign exchange were: 4.83 @ 4.83 1/2, and 4.86 1/2 @ 4.87. The actual rates were as follows: Sixty-day bills, 4.82 1/4 @ 4.83; demand, 4.85 1/4 @ 4.86; cables, 4.86 1/4 @ 1/2; commercial bills, 4.81 @ 4.81 1/2. Continental bills were as follows: Francs, 5.21 1/4 @ 5.21 1/2, and 5.18 1/2; reichsmarks, 94 1/2 @ 1/4 and 95 1/2 @ 1/4; guilders, 39 1/2 and 40 1/2.

From a statement which was presented at the recent monthly meeting of the directors of the Chicago, Milwaukee and St. Paul Railway Company we learn that the gross earnings of the road during the year 1882 were \$20,386,725.86, the operating expenses \$12,186,073.21 (or 59.77 per cent), and the net earnings \$8,200,652.65.

There was chargeable to the income account, interest on the bonds for 1882 and 7 per cent dividend on preferred and common stock, \$7,581,040.58—leaving a balance of net earnings of \$619,612.07. The cash receipts from the sales of lands during the year were \$1,014,223.16, and the addition to the surplus was \$1,633,835.23.

The Secretary of the Treasury issued on the 1st inst. the 120th call for the redemption of bonds of the 5 per cent funded loan of 1881, continued at 3 1/2 per cent from August 12, 1881. The call is for \$15,000,000, and notice is given that the principal and accrued interest will be paid at the Treasury May 1, and that the interest on said bonds will cease on that day.

The bonds called are registered bonds of the acts of July 14, 1870, and January 20, 1871, continued during the pleasure of the Government under the terms of circular No. 52, dated May 12, 1881, to bear interest at the rate of 3 1/2 per centum per annum, from August 12, 1881, as follows: \$50—No. B 401 to No. B 478, both inclusive; \$100—No. B 3,101 to No. B 3,650, both inclusive, and No. B 13,332 to No. B 13,358, both inclusive; \$500—No. B 1,601 to No. B 1,950, both inclusive, and No. B 5,965 to No. B 5,973, both inclusive; \$1,000—No. B 7,501 to No. B 9,400, both inclusive, and No. B 20,814 to No. B 20,840, both inclusive; \$5,000—No. B 2,001 to No. B 2,500, both inclusive, and No. B 5,811 to No. B 5,815, both inclusive; \$10,000—No. B 5,001 to No. B 9,000, both inclusive, and No. B 18,486 to No. B 18,490, both inclusive; \$20,000—No. B 1,501 to No. B 1,537, both inclusive, and No. B 2,249 to No. B 2,250, both inclusive; \$50,000—No. B 3,051 to No. B 3,900, both inclusive, and No. B 6,047 to No. B 6,056, both inclusive.

The bonds before described are those last dated and numbered as required by section 3 of the act of July 14, 1870, and those embraced in the highest numbers in the several denominations as given are the bonds which have been issued on transfers since the 119th call was issued. Many of the bonds originally included in the above numbers have been transferred or exchanged and cancelled, having outstanding the amount above stated.

The three months' interest due May, 1883, on the above-described bonds will not be paid by checks forwarded to the holders of the bonds, but will be paid, with the principal, to the holders at the time of presentation.

The Commissioners of Accounts in their report to the Mayor say that during the statutory year just closed the receipts of the City of New York from all sources amounted to \$65,428,143.75, which, added to a cash balance from 1881 of \$11,614,286.54, makes a total of \$77,042,430.29. During the year the sum of \$69,783,522.53 was paid out of the city treasury, making the amount of cash in the hands of the City Chamberlain \$7,258,907.76, which was on deposit in the following companies:—Importers and Traders' National Bank, \$713,137.76; Marine National Bank, \$525,000; Hanover National Bank, \$1,180,000; Continental National Bank, \$1,200,000; St. Nicholas National Bank, \$600,000; Oriental Bank, \$150,000; United States National Bank, \$730,000; Lincoln National Bank, \$770,770; National Park Bank, \$650,000;

Chatham National Bank, \$140,000; Merchants' National Bank, \$200,000, and the Central Trust Company, \$400,000. The amount of money borrowed on the credit of the city during the year was \$24,965,715.40, and stocks and bonds were paid and cancelled to the amount of \$26,825,924.04. The total gross debt at the end of the year, represented in stocks, bonds and otherwise, is given as \$146,598,243.53, of which the Commissioners of the Sinking Fund for the redemption of the debt hold \$39,371,243.53, making the total net debt \$107,227,000.

The Department of State at Washington has just issued a report on the commercial relations of the United States with the world for a series of years. That part which relates to our commerce with Mexico, owing to the pending treaty negotiations, is of peculiar interest. It gives the figures in detail of the imports from that country, both free of duty and dutiable, for the fiscal year 1881, which amounted to \$8,317,802. During the same period the exports from the United States to Mexico amounted to \$11,191,238, of which \$1,993,161 represented foreign merchandise. Iron and steel manufactures show the greatest increase in value over the exports for the preceding year, the increase being \$1,267,000; cotton manufactures next, \$186,000. The increase in the general trade of the country may be attributed in a great measure to the wants created by the development of railroad and mining interests, which in their growth will necessarily create other industries. The Secretary says it is not too much to assume that the imports of Mexico, under fairly favorable circumstances, will double their present proportions during the next five years, and that one-half of this trade should be with the United States.

A full and final settlement has been effected between the Crawford syndicate and the Louisville, New Albany and Chicago Railroad Company whereby the latter came into possession on the 1st inst. of 158 miles of new road. This new road, extending from Indianapolis to Chicago, is an air line and was built by Henry Crawford for the Louisville, New Albany and Chicago Company. The terms on which the company accepted the work are said to have been entirely satisfactory to vice-president Standiford and his associates. Trains will be run at once, the company having secured additional rolling-stock in anticipation of the new acquisition. The new road will be known as the Indianapolis Division of the Louisville, New Albany and Chicago Railroad.

The refunding of the \$1,700,000 Camden and Amboy Railroad 6s of 1883, which fell due on the 1st inst., into the new United Companies of New Jersey forty year gold 4s, has been completed. The new loan was issued at 93 1/2.

The stockholders of the Buffalo, New York and Philadelphia, and the Olean and Salamanca Railroad Companies have voted unanimously in favor of the consolidation of those roads with the Buffalo, Pittsburgh and Western and the Oil City and Chicago Railroads. The consolidated road, which will be known as the Buffalo, New York and Philadelphia Railroad Company, will have a capital stock equal to the sum of the capitals of the several companies merging, and will assume all the liabilities of



each company. The holders of the common and preferred stock of the Buffalo, New York and Philadelphia, and the Olean and Salamanca, will receive 20 per cent additional stock in kind, payable out of the stock now in the treasury of the Buffalo, Pittsburgh and Western. The stockholders of the Buffalo, Pittsburgh and Western, and of the Oil City and Chicago (other than the Buffalo, Pittsburgh and Western Railroad Company), will receive share for share. The Buffalo, Pittsburgh and Western will receive share for share for all the stock of the Oil City and Chicago remaining in the treasury after deducting the 20 per cent to be paid to the stockholders of the Buffalo, New York and Philadelphia, and the Olean and Salamanca.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atlantic and Pacific 1st, 94; Atchison, Colorado and Pacific 1st, 90; Buffalo, New York and Erie 1st, 1916, 130; Boston and New York Air Line pref., 81; Chicago and Northwestern S. F. 58, 100½; Chicago and Eastern Illinois 1st, 99½; Cedar Falls and Minnesota, 14; Chicago, St. Paul, Minn. and Omaha, 46½; do. pref., 105; do. consol., 108; Chesapeake and Ohio cur. 68, 53; do. 68, 1911, 100½; Chicago, Milwaukee and St. Paul, Southern Minn. div. 1st, 106½; do. Chicago and Pacific div. 1st, 108½; do. Chicago and Pacific Western div. 1st, 92; do. Southwestern div. 1st, 107½; do. La C. and Dav. div. 1st, 94½; Chicago, Burlington and Quincy, Iowa div. 48, 87½; do. Denver div. 48, 84½; Chicago, St. Paul and Minneapolis 1st, 108; Columbus, Hocking Valley and Toledo 1st, 85; Chicago, St. Louis and New Orleans 1st, 117; do. 58, 104; Col., Chicago and Ind. Central inc., 50; do. Reorganization cert., 62; Denver and Rio Grande, 45½; do. 1st, 108½; do. consol., 89½; Denver, South Park and Pacific 1st, 94; East Tenn., Va. and Ga., 9½; do. pref., 16; do. inc., 38; do. 58, 71½; Evansville and Terre Haute, 75; do. 1st, 97; Elizabethtown, Lex. and Big Sandy 68, 94; Fort Worth and Denver, 30½; Gulf, Colorado and Santa Fe 1st, 111; Hudson River 2d, S. F., 106½; Hannibal and St. Joseph 68, consol., 108; Indianapolis, Decatur and Springfield 1st, 101½; International and Gt. Northern coupon 68, 83; do. 1st, 105; Indiana, Bloomington and Western, 30; do. inc., 43; do. Eastern div. 1st, 92½; Illinois Leased Line, 78½; Iowa Midland 88, 129½; Jefferson 1st, 105; Keokuk and Des Moines 1st, 101½; Kansas Pacific 68, 1896, 108; do. 1st consol., 98; do. 1st, Denver div. ass., 107½; Louisiana and Missouri River 1st, 114½; Long Island, 62½; do. consol. 58, 97½; do. 1st, 117½; Louisville, New Albany and Chicago, 64; do. 1st, 102½; Lake Erie and Western, 28½; do. 1st, 98½; Louisville and Nashville gen'l mort. 68, 92½; Lafayette, Bloomington and Muncie 1st, 100; Minneapolis and St. Louis, 26; do. pref., 60; do. Southwestern Ext. 1st, 110½; do. Pacific Ext. 1st, 101½; Missouri, Kansas and Texas, 30½; do. gen'l mort. 68, 70½; do. consol., 78, 105; do. 2d, 56; Missouri Pacific, 101½; do. 3d, 109½; Memphis and Charleston, 43; Mobile and Ohio, 18½; do. new mort., 107; do. 1st debent., 83; do. 3d debent., 37; Manhattan Beach, 18½; Milwaukee, Lake Shore and Western pref., 46; do. 1st, 98½; Michigan Southern S. F., 106½; Michigan Central 58, 102½; New York, Chicago and St. Louis, 11½; do. pref., 26; do. 1st, 97½; Nashville, Chattanooga and St. Louis, 61; do. 1st, 116; New York, Ontario and Western, 25½; Norfolk and Western pref., 44; do. gen'l mort., 101½; Northern Pacific 1st, 103½; New Orleans Pacific 1st, 89; Nashville and Decatur 1st, 116; Ohio Central, 12; do. 1st, 93½; Oregon Railway and Nav., 138; do. 1st, 106½; Oregon Transcontinental, 84; do. 1st, 94½; Ohio Southern, 13; do. 1st, 81½; Oregon Short Line 68, 96½; Peoria, Decatur and Evansville, 23; do. Evansville div. 1st, 99½; Pennsylvania Co. 4½, 95½; Rome, Watertown and Ogdensburg ext. 58, 73; do. inc., 43; Rochester and Pittsburgh, 20½; do. 1st, 104; Richmond and Danville, 55; do. 1st, 93½; do. debent., 58; Richmond and Alleghany, 12½; do. 1st, 70½; Richmond, Danville and West Point, 26; St. Paul, Minn. and Man., 142; do. 1st, 109; do. 2d, 108½; do. Dakota Ext. 1st, 108½; St. Paul and Duluth, pref., 95; Southern Pacific of Cal. 1st, 104½; South Pacific of Missouri 1st, 103½; St.

Louis and Iron Mt. Arkansas Branch 1st, 109; do. 58, 76½; Cairo, Ark. and Texas 1st, 109; do. Cairo and Fulton 1st, 109½; St. Louis, Alton and Terre Haute div. bonds, 75; South Carolina 1st, 102½; St. Louis, Kansas City and Northern, Omaha div. 1st, 109; do. St. Charles Bridge 1st, 90; do. R. E. 78, 108½; St. Louis and San Francisco 2d, Class B, 94; Texas Central 1st, 105½; Texas and Pacific, 38½; do. inc., L. G., 58½; do. Rio Grande div. 1st, 80½; Utah Southern ext. 1st, 100½; Union Pacific col. trust, 104; Winona and St. Peter 1st, 106; Wabash, St. Louis and Pacific gen'l mort., 68, 78½; do. Toledo, Peoria and Western 1st, 107½; do. Iowa div. 1st, 90; Alabama, Class A, 82; do. C, 85; Arkansas 78, M., O. & R. R., 51; do. L. R. & Ft. S., 67; do. L. R., P. B. & N. O., 55; do. Central, R. R., 25; do. 68, fund., 25; Georgia 68, 1886, 107½; do. 78, gold, 114; do. 78, endorsed, 107; Louisiana consol., 73; North Carolina 68, old, 31; Tennessee 68, 44; do. compromise bonds, 47½; Mutual Union Tel., 23; do. 68, 76½; American Cable, 66; Am. Dist. Tel., 40; Colorado Coal and Iron, 28½; do. 68, 80½; Maryland Coal, 17; Pennsylvania Coal, 270; Homestake Mining, 17½; Ontario, 34.

**Boston.**—Atlantic and Pacific inc., 10; do. blocks, 103½; do. 68, 93½; Burlington and Missouri River in Nebraska 68, non-exempt., 103½; Connecticut and Passumpsic Rivers, pref., 90; Cincinnati, Sandusky and Cleveland pref., 23; do. 78, 103; Chicago, Burlington and Quincy 48, Denver ext. 83; do. S. W. div. 48, 80; California Southern 1st, 61; Chicago and West Michigan, 61; Connorton Valley, 3; Detroit, Lansing and Northern, 81; Flint and Pere Marquette, 26½; do. pref., 99; Iowa Falls and Sioux City, 87; Kansas City, Springfield and Memphis blocks, 101½; Kansas City, Lawrence and Southern 58, 104½; Kansas City, St. Joseph and Council Bluffs, 78, 113½; Little Rock and Ft. Smith, 32½; do. 78, 96½; Leavenworth, Topeka and Southwestern 48, 73; Mexican Central, 20; do. 78, 74; do. inc., 20½; Marquette, Houghton and Ontonagon, 66½; do. pref., 114½; Massachusetts Central, 3½; do. 68, 21; Maine Central, 89; Metropolitan Passenger 78, 102½; New Mexico and Southern Pacific 78, 113; New York and New England 68, 105½; Oregon Short Line 68, 95½; Ogdensburg and Lake Champlain consol. 68, 98; Portsmouth, Gt. Falls and Conway, 30½; Rutland, 3; do. pref., 15½; do. 58, 63; Sonora 78, 105; Southern Kansas and Western 78, 109½; Toledo, Cincinnati and St. Louis, 5; Toledo, Delphos and Burlington 68, S. E. div., 50; do. Branch inc., 12; Wisconsin Central, 17½; do. pref., 27; Brunswick Antimony, 13; Franklin Mining, 14; Huron, 1¾; Napa Consol. Quicksilver, 3½; Osceola, 30; Pewabic, 9½.

**Philadelphia.**—Am. Steamship Co. 68, 106; Central Transp., 34; Hestonville Passenger 1st, 101½; Huntington and Broad Top Mt. consol. 58, 88½; Nesquehoning Valley, 54; Northern Central 68, series B, 95½; do. 68, 1894, 112½; Oil Creek 1st, 104; Philadelphia City 68, 1889, 117; do. 68, 1896, 129; do. 68, 1903, 133½; do. 48, 1885, 103; Philadelphia and Reading R. R. consol. mort., 58, 1st series, 87; second series 68; do. gen'l mort. 78, 101½; do. scrip, 105; do. adj. scrip, 85; do. consol. gold 68, 110½; do. debent. 68, 75; Philadelphia and Reading Coal and Iron debent. 78, 77; do. debent. 68, 1893, 69; Pennsylvania Canal 68, 87; Pennsylvania 4½, 94½; Philadelphia, Wilmington and Baltimore 48, 93½; People's Passenger 78, 86; Philadelphia, Germantown and Norristown, 106½; Susq. Canal 78, 73; do. 68, 65; Shamokin Valley and Pottsville 78, 121½; Sunbury, Hazleton and Wilkesbarre 2d, 68, 29; West Jersey and Atlantic 68, 110½; West Chester and Philadelphia 78, 118; Warren and Franklin 78, 110½; West Jersey, 50; do. 68, 115. The latest quotations are: Pennsylvania State 58, new loan, 116½@117½; do. 48, old, 110@112; do. 48, new, 116@117; Philadelphia and Reading Railroad, 26½@26½; do. consol. mort. 78, reg., 125@126; do. gen'l mort. 68, coupon, 94@95; do. 78, 1893, 119@120; do. 78, new conv., 74@76; do. gen'l mort. 78, 101@101½; do. consol. mort. 58, 1st series, 84½@87½; do. 2d series, 67½@68½; United New Jersey R. R. and Canal, 189½@100½; Buffalo, Pittsburgh and Western, 16½@17; Pittsburgh, Titusville and Buffalo 78, 94@94½; Camden and Amboy mort. 68, 1889, 112@113; Pennsylvania R. R., 6c@6c½; do. general mort. 68, coupon, 123@124; do. reg., 125@126; do. consol. mort. 68, reg., 119½@120½; Little Schuylkill R. R., 58½@59½; Schuylkill Navigation pref., 13@14; do. 68, 1882, 88@90; Elmira and Williamsport pref., 58@59; do. 58, 99@100; Lehigh Coal and Navigation, 38½@39; do. 68, 1884, 102@103; do. R. R. loan, 114@115; do. Gold Loan, 1@112; do. consol. 78, reg., 116½@117; North Pennsylvania, 66½@

67; do. 68, 103@103½; do. 78, 119@—; do. 78, General mort. reg., 125@125½; Philadelphia and Erie, 19@—; do. 78, 112@113; do. 58, 104@104½; Minehill 62½@63½; Catawissa, 22@24; do. pref., 56@—; do. new pref., 53@—; do. 78, 1900, 117½@—; Lehigh Valley, 64½@65½; do. 68, coupon, 120@121; do. reg., 120½@121½; do. 78, reg., 133@134; do. consol. mort. reg., 121@121½; Fifth and Sixth streets (horse), —@200; Second and Third, 113@117; Thirteenth and Fifteenth, 75@80; Spruce and Pine, 42½@48; Green and Coates, 75@81; Chestnut and Walnut, 85@93; Germantown, 66@70; Union, 110@—; West Philadelphia, 135@—; People's, 6¼@—; Continental, 100@103.

**Baltimore.**—Atlanta and Charlotte, 61; do. 1st, 104½; Atlantic coal, 0.91; Baltimore City 68, 1902, 125; do. 68, 1886, 106½; do. 68, 1890, 113½; do. 58, 1916, 122; do. 58, 1885, 101; do. 28, 1920, 109½; Charlotte, Columbia and Augusta, 30; do. 2d, 102½; Columbia and Greenville, 1st, 107½; do. 2d, 73; Maryland Defense 68, 103½; Northern Central 58, series A 99½; Norfolk Water 88, 132; Ohio and Mississippi, Springfield div. 1st, 115; Virginia and Tennessee 88, 124½; do. 68, 101; Virginia Midland 1st mort., 112; do. 2d mort., 108; do. 5th mort., 95½; Wilmington, Columbia and Augusta, 110. The latest quotations are: Atlanta and Charlotte 1st, 104½@104½; Baltimore and Ohio, 200@205; do. 68, 1885, 104½@—; Baltimore City 68, 1884, 101½@—; do. 68, 1886, 106½@—; do. 68, 1892, 115@116; do. 68, 1900, 124@—; do. 58, 1885, 101½@—; do. 58, 1916, 122@—; Columbia and Greenville 1st, 1916, 101½@101½; Charlotte, Columbia and Augusta 2d, 102½@103; Canton 68, gold, 108½@110; Marietta and Cincinnati 78, 1891, 130½@131½; do. 78, 1896, 100½@101½; do. 88, 1890, 53½@54; Northern Central, 54½@54½; do. 68, 1885, 103½@103½; do. 68, 1894, gold, 113½@113½; Virginia Midland 5th mort., 95½@96; do. inc., 50@56; Virginia consol., 51½@51½; do. 10-408, 39½@40½; do. 38, 49½@50; Western Maryland 68, guar. by Washington county, 111½@113.

### Street Railways of Boston.

We have before us a comparative statement of the working of the several street railroads of Boston for the year ending September 30, 1882, taken from the reports to the Legislature of 1883, from which we learn that the average receipts per mile run have been as follows:

Middlesex Railroad	32	8-100 cents.
Union Railroad	24	82-100 "
Lynn and Boston Railroad	33	59-100 "
South Boston Railroad	33	45-100 "
Metropolitan Railroad	30	66-100 "
Highland Railroad	29	98-100 "

The average expenses per mile run during the same time were:

Middlesex Railroad	25	56-100 cents.
Union Railroad	26	35-100 "
Lynn and Boston Railroad	29	66-100 "
South Boston Railroad	28	42-100 "
Metropolitan Railroad	26	73-100 "
Highland Railroad	25	17-100 "

And the net profits per mile run were:

Middlesex Railroad	6	52-100 cents
Union Railroad	1	53-100 " loss.
Lynn and Boston Railroad	3	93-100 "
South Boston Railroad	5	3-100 "
Metropolitan Railroad	3	93-100 "
Highland Railroad	4	81-100 "

The average number of passengers per round trip has been as follows:

Middlesex Railroad	41
Union Railroad	38
Lynn and Boston Railroad	42
South Boston Railroad	41
Metropolitan Railroad	38
Highland Railroad	40

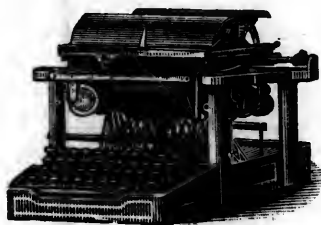
### ILLINOIS CENTRAL RAILROAD COMPANY.

**Forty-first Semi-Annual Cash Dividend.**  
The Board of Directors have declared a dividend of THREE AND ONE-HALF per cent in cash, payable March 1, 1883, to the shareholders of the ILLINOIS CENTRAL RAILROAD COMPANY as registered at the close of business on Feb. 10. They have also declared an extra dividend of ONE-HALF OF ONE per cent in cash, payable at the same time to said shareholders, out of the earnings of the SOUTHERN DIVISION for the six months ending Dec. 31, 1882. The stock transfer-books will be closed from and after Feb. 10, until the morning of March 5.  
L. V. F. RANDOLPH, Treasurer.  
New York, Jan. 18, 1883.

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All material and articles properly coming under the head of **RAILWAY APPLIANCES** or **SUPPLIES** admitted.

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 Secretary. President.

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## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Fe.100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S.100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point100	1,232,200	semi-an	Aug. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	West Chester & Phil. pref.100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv.100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt. M*100	225,000	semi-an	Jan. '82 3	Lowell & Andover.....100	500,000	semi-an.	Jan. '83 3 1/2	Wilmingt'n & Weld n.100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio.....100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly.	Jan. '82 2 1/2	Wil. Col. & Aug.....100	960,000	semi-an.	Jan. '83 3
" pref.100	5,000,000	semi-an	Jan. '83 3	Manchester & Law..... 00	1,000,000	semi-an.	Nov. '82 5	Winchester & Poto*c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manhattan.....100	13,000,000	.....	.....	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	" 1st pref.100	6,500,000	q'arterly.	Jan. '83 1 1/2	Worcester & Nashua. 75	1,769,800	semi-an.	Jan. '83 1 1/2
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	" 2d pref.100	6,500,000	q'arterly.	Jan. '83 1 1/2				
Bos. & N. Y. Air Line pf.100	2,795,227	q'arterly	June '82 1	Marq. Hout. & Ont.....100	2,306,600	.....	Feb. '83 4				
Bos., Cl. F. & N. B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	" pref.100	2,259,026	semi-an.	Feb. '83 4				
Bos., Conc. & Mont. pf.100	800,000	semi-an	Nov. '82 3	Massachusetts*.....100	400,000	semi-an.	Feb. '83 3	Albany City.....100	200,000	annual	..... '80 5 1/2
Boston and Lowell.....500	3,940,000	semi-an	Jan. '83 2 1/2	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Michigan Central.....100	18,738,204	.....	Feb. '83 2	Balt., Cat. & El. Mills.....100	80,000	semi-an.	Jan. '83 2 1/2
Boston & Providence.....100	4,000,000	semi-an	Nov. '82 4	Middlesex Central.....100	280,000	semi-an.	Feb. '83 3	Bleecker St. & Ful. F'y. 50	900,000	semi-an.	July '82 1/2
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Bos. Revere B. & Lynn.....100	419,400	semi-an	Jan. '83 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
Buffalo, N. Y. & Erie*.....100	950,000	semi-an	Dec. '82 3	Missouri Pacific.....100	28,169,800	q'arterly.	Jan. '83 1 1/2	B'way & 7th Av. (N. Y.)100	2,100,000	q'arterly	Oct. '82 2
Buff. Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	Mobile & Montgomery100	3,022,517	semi-an.	Feb. '82 4 1/2	B'klyn & Hunter's Pt.100	400,000	semi-an.	Oct. '82 6
Camden & Atlantic..... 50	377,400	q'arterly	Nov. '82 3	Morris and Essex..... 50	15,000,000	semi-an.	Jan. '83 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
" pref. 50	880,650	q'arterly	Nov. '82 4	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6	Bushwick (Brooklyn)100	309,000	semi-an.	Oct. '82 6
Camden & Burl. Co.....100	31,925	semi-an	Jan. '83 3	Nashua and Lowell.....100	800,000	semi-an.	Nov. '82 4	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Nashua & Rochester.....100	1,305,800	semi-an.	Oct. '82 1 1/2	Can. Park N. & E. Riv.....100	1,800,000	q'arterly.	Oct. '82 6
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashv. & Decatur.....100	1,827,000	semi-an.	June '82 3	Christoph'r & Tenth St100	650,000	semi-an.	Aug. '82 2 1/2
Catawissa*.....50	1,159,500	annual	Oct. '82 2 1/2	Nash., Chat. & St. Louis 25	6,070,325	semi-an.	Apr. '82 1 1/2	Citizens' (Phil.)..... 50	192,500	q'arterly.	Jan. '82 2 1/2
" pref. 20	2,200,000	semi-an	Nov. '82 3 1/2	Naugatuck.....100	2,000,000	semi-an.	Jan. '83 5	Citizens' (Pbg.)..... 50	200,000	annual.	..... '80 1 1/2
" new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sept. '82 3	Coney Island & Bklyn100	500,000	semi-an.	Oct. '80 5
Cayuga and Susq*..... 50	589,110	semi-an	Jan. '83 4 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly.	Oct. '82 1	Continental (Phil.)..... 50	580,000	semi-an.	Jan. '83 6
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Feb. '83 1 1/2	New London North n.100	1,500,000	q'arterly.	Jan. '83 1 1/2	D. Dock, E. B'way & Bat100	1,200,000	q'arterly	Aug. '82 4
" pref.100	769,600	semi-an	Feb. '83 3 1/2	N. Y. Cen. & Hud. n. R.100	89,428,330	q'arterly.	Jan. '83 2	Eighth Av. (N. Y.).....100	1,000,000	q'arterly.	Oct. '82 3
Central of Georgia.....100	7,500,000	semi-an	Dec. '82 4	N. Y. and Harlem.....100	7,950,000	q'arterly.	Jan. '83 4	42d St. & G. St. Ferry100	747,000	semi-an.	May '82 6
Central of New Jersey100	18,563,200	q'arterly	July '82 2 1/2	" pref.100	1,500,000	q'arterly.	Jan. '83 4	Frankf. & Southw (Ph) 50	600,000	q'arterly.	Oct. '82 6
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	" City Line..... 100	10,000,000	annual	Apr. '82 3	Germantown, (Ph.)..... 50	1,540,902	q'arterly.	Jan. '83 2 1/2
" pref. 50	411,550	semi-an	Jan. '83 3	N. Y., Lack. & West.....100	10,000,000	q'arterly.	Jan. '83 1 1/2	Girard College (Ph.)..... 50	500,000	semi-an.	July '71 3
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	N. Y., Lake Erie & West.....100	77,087,600	.....	.....	Grand St. & Newton.....100	170,091	semi-an.	July '81 2 1/2
Cheehire preferred.....100	2,155,300	semi-an	Jan. '83 1 1/2	" pref.100	7,987,500	annual.	Jan. '83 6	Green & Coates St. (Ph) 50	708,650	q'arterly.	Jan. '83 3
Chicago and Alton.....100	11,181,741	semi-an	Sept. '82 4	N. Y., N. H. & Hart.....100	15,500,000	semi-an.	Jan. '83 5	Heston, Mantau & F'm 50	299,381	semi-an.	Jan. '75 4
" pref.100	2,245,400	semi-an	Sept. '82 4	N. Y., Prov. & Boston100	3,000,000	q'arterly.	Feb. '83 2	Highland.....100	600,000	semi-an.	Jan. '83 4
Chi., Burl. & Quincy.....100	69,508,105	q'arterly	Dec. '82 2	Niag. Bridge & Canand*100	1,000,000	semi-an.	Oct. '82 3	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
Chi., Iowa & Nebras*.....100	3,916,200	semi-an	Jan. '83 4	North Carolina*.....100	3,000,000	semi-an.	Sept. '82 3	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
Chi., Mil. & St. Paul.....100	20,404,261	semi-an	Oct. '82 3 1/2	" pref.100	1,000,000	semi-an.	Sept. '82 3	Malden and Melrose.....100	165,000	.....	.....
" pref.100	14,401,483	semi-an	Oct. '82 3 1/2	N. Eastern (S.C.) pref.100	86,000	semi-an.	May '81 4	Metropolitan (Bost.).....100	1,500,000	semi-an.	Jan. '83 4
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	Norfolk & Western pref.100	15,000,000	q'arterly.	Dec. '82 3 1/2	Middlesex (Boston).....100	650,000	semi-an.	Nov. '82 3 1/2
" pref.100	21,525,353	q'arterly	Dec. '82 2	North Pennsylvania.....100	4,527,150	q'arterly.	Feb. '83 1 1/2	N. Y., Bay Ridge & Jam100	150,000	.....	Oct. '78 7
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4	Ninth Av. (N. Y.).....100	797,320	.....	.....
Chi. and West Mich.....100	6,151,000	semi-an	Feb. '83 3	Northern N. Hampshire100	3,068,400	semi-an.	Dec. '82 3	Orange & Newark.....100	282,555	.....	.....
Chi. St. P., M. & O. pref.100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern Pacific pref.100	41,909,132	.....	Jan. '83 1 1/2	People's (Phila.) pref. 25	115,250	.....	July '82 2
Cin., Ham. & Dayton.....100	3,500,000	semi-an	Jan. '83 3	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5	Philadelphia City..... 50	475,000	semi-an.	July '82 4
C. Ind., St. L. & Chi.....100	6,000,000	q'arterly	Jan. '83 1 1/2	Oregon & Transcont'l.100	40,000,000	q'arterly.	Jan. '83 1 1/2	Phila. and Darby..... 20	200,000	semi-an.	July '81 3 1/2
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2	Phila. & Grey's Ferry..... 50	308,000	semi-an.	Jan. '82 6
Clev., Col. Cin. & Ind.....100	14,991,800	.....	Feb. '83 2	Oregon R'way & Nav.....100	13,000,000	q'arterly.	Feb. '83 2 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly.	Oct. '81 3
Clev. and Pittsburg*..... 50	11,244,336	q'arterly	Dec. '82 1 1/2	Oswego & Syracuse.....100	1,320,400	semi-an.	Feb. '83 2 1/2	Ridge Avenue (Ph.).....100	420,000	semi-an.	Oct. '81 11
Columbus & Xenia*..... 50	1,786,200	q'arterly	Dec. '82 2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	Second Avenue (N. Y.)100	1,199,500	semi-an.	July '82 4
Col. Hock. Val. & Tol.....100	10,316,500	.....	Jan. '83 2 1/2	Paterson & Hudson*.....100	630,000	semi-an.	Jan. '83 4 1/2	Second & Third St. (Ph) 50	771,076	q'arterly.	Jan. '83 4
Concord..... 50	1,500,000	semi-an	Nov. '82 5	Paterson & Ramapo.....100	248,000	semi-an.	July '82 4	17th & 19th sts. (Ph.)..... 50	250,000	semi-an.	July '81 3
Concord and Ports*.....100	350,000	semi-an	Jan. '83 3 1/2	Pemb. & Hightst'n*..... 50	342,150	semi-an.	Jan. '83 3	Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82 5
Conn. & Passump. Riv.....100	2,244,400	semi-an	Feb. '83 3	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 1 1/2	Somerville (Boston).....100	113,000	semi-an.	Nov. '82 3
Connecticut River.....100	2,100,000	semi-an	Jan. '83 4	Pennsylvania Co..... 50	20,000,000	annual	Dec. '82 4	South Boston..... 50	600,000	semi-an.	Jan. '83 4
Cumberland Valley..... 50	1,292,950	q'arterly	Jan. '83 2 1/2	Peoria & Bureau Val*100	1,200,000	semi-an.	Feb. '83 4	Third Avenue, N. Y.....100	2,000,000	q'arterly.	Aug. '82 5
" 1st pref. 50	241,900	semi-an	Oct. '82 4	Philadelphia & Erie*.....100	7,013,700	semi-an.	.....	13th and 15th sts. Ph 50	334,529	q'arterly.	Jan. '83 4
" 2d pref. 50	243,000	semi-an	Oct. '82 4	" pf. 50	2,400,000	semi-an.	Jan. '75 4	23d street, N. Y.....100	600,000	semi-an.	Aug. '82 4
Danbury & Norwalk..... 50	600,000	.....	Oct. '82 2 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly.	Dec. '82 3	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
Dayton and Mich.*..... 50	2,402,573	semi-an	Oct. '82 1 1/2	Phil. and Reading..... 50	32,726,375	q'arterly.	Jan. '76 2 1/2	Union, Phila.....100	1,005,000	semi-an.	Jan. '82 7
" pref. 50	1,211,250	q'arterly	Jan. '83 2	" pref. 50	1,551,800	q'arterly.	July '76 3 1/2	West Philadelphia..... 50	750,000	semi-an.	July '77 10
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	Phila. and Trenton.....100	1,250,100	q'arterly.	Jan. '83 2 1/2				
Del. & Bound Brook*100	1,652,000	q'arterly	Feb. '83 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4				
Del., Lack. & Western 50	26,000,000	q'arterly	Jan. '83 2	Pittsb., Ft. W. & Chi*100	19,714,285	q'arterly.	Jan. '83 1 1/2				
Denver & Rio Grande.....100	29,160,000	q'arterly	Jan. '82 1 1/2	" Special Imp. 100	6,770,900	q'arterly.	Jan. '83 1 1/2				
Detroit, Lans. & Nor.....100	1,825,600	semi-an	Feb. '83 3	Pittsfield & N. Adams.....100	450,000	semi-an.	Jan. '83 2 1/2				
" pref.100	2,503,380	semi-an	Feb. '83 3 1/2	Portl., Saco & Portsmouth100	1,500,000	semi-an.	Jan. '83 3				
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Providence & Worces.100	2,000,000	semi-an.	Jan. '83 3				
East Pennsylvania*..... 50	1,709,550	semi-an	Jan. '83 3	Rensselaer & Saratog*100	7,000,000	semi-an.	Jan. '83 4				
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Richmond & Danv.....100	5,000,000	q'arterly.	Aug. '82 2				
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Petersb.100	1,009,300	semi-an.	Aug. '82 2				
Eel River.....100	3,000,000	q'arterly	Dec. '82 3 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '83 3				
Elmira & Williams p't* 50	500,000	semi-an	Nov. '82 1 1/2	Rome Water & Ogden100	5,293,900	.....	Jan. '83 3				
" pref. 50	500,000	semi-an	Jan. '83 3 1/2	Rutland preferred..... 50	4,000,000	semi-an.	Sept. '82 1				
Erie and Pittsburg*..... 50	1,998,400	q'arterly	Dec. '82 1 1/2	Spuytent Du'vil & Pt. M.100	989,000	semi-an.	Jan. '83 4				
Evanville & Terre H.....100	100,000	semi-an	Jan. '83 6b	St. L., Alt. & T. Haute.....100	2,300,000	.....	.....				
Fitchburg.....100	4,500,000	semi-an	Jan. '83 3	" pref.100	2,408,406	.....	Dec. '82 4				
F. & P. Marquette pf.100	6,500,000	semi-an	Jan. '83 3 1/2	St. L. & S. Fran. 1st pref.100	4,500,000	semi-an.	Feb. '83 3 1/2				
Ft. Wayne & Jack. pf.100	2,000,000	.....	May								

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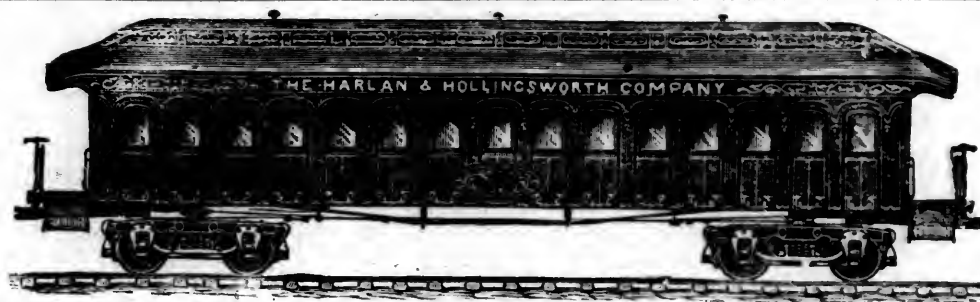
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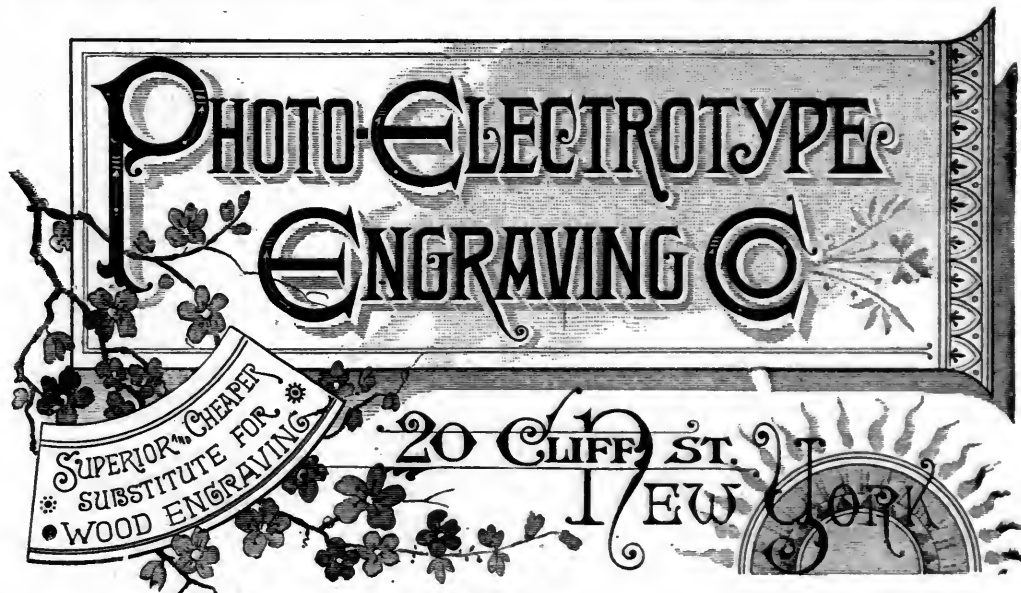
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## RAILROAD EARNINGS.—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	229,921	261,439	300,155	278,439	246,622	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,306	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	342,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	1,063,204	1,278,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,203	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,670	1,591,052	1,560,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	251,648	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,629	392,921	432,615	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,796	4,973,652
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	221,320	211,614	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,284	548,284	606,193	589,287	638,432	547,655	624,728	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	626,728	6,349,657
<b>HANNUBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,303,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,503	249,252	239,891	2,330,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	200,677	200,064	199,846	190,125	272,114	247,132	225,678	200,454	192,622	1,487,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,160	269,646	256,998	265,212	2,641,675
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,244,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,550	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,093	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,212	2,403,224
1882.....	159,676	158,590	148,166	141,937	134,378	135,184	135,174	137,475	157,874	207,433	295,110	307,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	261,082	3,448,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	240,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,228	16,509,127
1880.....	1,252,218	1,296,381	1,644,958	1,643,151	1,592,544	1,661,812	1,508,976	1,606,874	1,786,417	1,899,010	1,799,338	1,726,784	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,103	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	499,505	494,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,502	503,083	667,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,655	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,231								

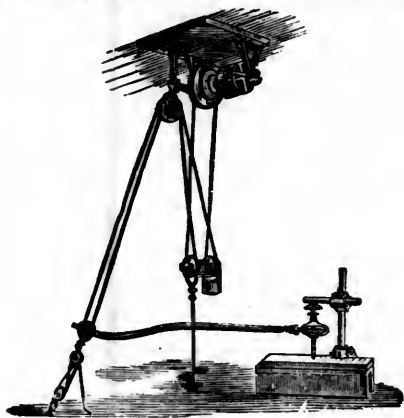
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## CANADIAN DEPARTMENT.

Mr. JAMES J. WHITE, Ottawa, Canada, writer of "Our Canadian Letter," acts as agent for the AMERICAN RAILROAD JOURNAL COMPANY, in Canada. He is authorized to receive, in behalf of the company, subscriptions and advertisements for this journal; also news of the character which he can utilize in the preparation of his Letter, or send to us for use elsewhere within these columns. He respectfully invites information concerning Railroad matters generally, Mining, Banking, Finance and Manufactures.

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

THE OTTAWA, WADDINGTON AND NEW YORK RAILROAD AND BRIDGE CO.—ITS IMPORTANCE AS A CONNECTING LINE—RAILROAD NOTES, ETC.

THE OTTAWA, WADDINGTON AND NEW YORK RAILROAD AND BRIDGE COMPANY.

This company was chartered in May, 1882, by the Dominion Parliament, the main object of the promoters being to secure a direct route from Ottawa to New York, Boston and the coal fields of New York and Pennsylvania, with a bridge over the St. Lawrence River from a point on the Canada side, about two miles above Morrisburg, Ont., crossing the river and Ogdens Island to Waddington—there now being no bridge connecting the two countries between Niagara River and Montreal. The line, with the present connections, besides the great advantage of a bridge over the St. Lawrence, shortens the distance to New York twenty-five miles; and as two roads are projected to connect at Canton—one from Schenectady and one from North Creek, one or both of which will shortly be commenced—the distance between Ottawa and New York will be further reduced fifty-three or eighty-five miles, according to the line which may be constructed. The distance from Ottawa to New York will then be about 372 miles, all rail, and without change of cars; so that parties leaving Ottawa in the morning can reach New York the same evening, and *vice versa*. This cannot be done at present, and it is a great drawback to trade and travel between the great commercial metropolis of the United States and the capital of the Dominion of Canada. Since the company received its charter they have been awaiting the movements of the New York and Canada Bridge Co., organized to join the Canadian company in the construction of the St. Lawrence River bridge. The State charter for the American Bridge Company was not ratified by Congress until the latter part of July last. Immediately thereafter the Ottawa and Waddington Co. placed their engineers on the road, made a careful survey and soundings of the St. Lawrence and Ottawa River bridge sites, and surveyed and located the line of railway; and on the 15th of January, 1883, the plan and profile of the railway and the plans of the bridges were completed, and the whole line and bridges are now ready for contract and construction. It is not easy in a limited article to describe the advantages to be derived from the construction of the proposed line, which it is claimed will, with its connections, rank next in importance in

Canada to the Canadian Pacific and Grand Trunk railways.

The company have taken powers and propose to commence their railway on the Quebec side of the Ottawa River, within the limits of the city of Hull, forming a junction with the Quebec, Montreal and Ottawa—or Canadian Pacific Railway, as it is now called—running to Montreal, the Gatineau Valley, the great lumber and mining railway, and the Pontiac and Pacific Junction (which taps the Canadian Pacific at Pembroke), forming the shortest route from Sault Ste. Marie and the Northwest to Ottawa. By this move the company secure the lumber of the large mills owned by the Gilmours in Hull and Chelsea, Eddy's mills, the Duchesne or Conroy mills, and the traffic of the Gatineau Valley and the Pontiac and Pacific, and affording those lines the shortest through route, to connect with the railway system of New York State; crossing the Ottawa River to the St. Lawrence and Ottawa Railway depot on Sussex street, Ottawa, with a railway and wagon bridge, they acquire and utilize the branch of the St. Lawrence and Ottawa, to the Chaudière Junction, taking in McLaren's mills on their way; and crossing the Canada and Atlantic less than a mile from the city, they take from that line the lumber from the Chaudière in the same way as they secure that at the Chaudière Junction, coming out on the St. Lawrence and Ottawa, which has a line running in from the Junction to the Chaudière, which will be their main and daily line in when this road is built. In fact it is a scheme devised to catch all the freight and passenger traffic centering at Hull and Ottawa, going to the St. Lawrence and thence East and West by the Grand Trunk and South over the St. Lawrence bridge to New York, Boston and the coal fields. This railway between Ottawa and Morrisburg passes through four of the best townships in Eastern Canada, with a local traffic that will exceed in the forty-five miles of road between Ottawa and Morrisburg one hundred thousand dollars a year, passing as it does through the thriving villages of Metcalf, Vernon, Ormond, West Winchester, the celebrated Winchester Springs, Bell's Corners and Morrisburg. Even the small saw mills along the line turn out over 8,000,000 feet of lumber annually, which, with the eight hundred thousand millions manufactured in the Ottawa country, will tax the carrying capacity of several railways. Crossing the St. Lawrence to Waddington, N. Y., a short road of sixteen and one-half miles is projected to Canton, and crosses the Ogdensburg and Lake Champlain Railroad about nine miles from Waddington. Once at Canton, the road from Ottawa to New York is shortened by twenty-five miles; and, as before stated, will likely be further shortened from fifty to eighty miles. It is claimed for this railway, (1) That it will be the shortest route between Ottawa and New York; and with the bridge and all rail, enabling passengers to go through in fourteen hours without change of cars, it will greatly increase the passenger traffic between the two places. (2) That it will be the great line for sawed lumber, phosphates, iron, and minerals of every description from the Ottawa region to New York, Boston and Pennsylvania. (3) It is the shortest and best line to the coal fields

even from Montreal via the Grand Trunk. It is the shortest route from Sault Ste. Marie and the Northwest to New York, and it is the shortest route from Toronto to New York via the Grand Trunk and crossing at Morrisburg; and—as freight and passenger traffic will always find their proper level—all roads running East and West between Ottawa and the St. Lawrence must switch on to their road and cross their bridge. As to the road's paying within a few years, Ottawa will become the center of the railway system of Canada.

The managing provisional director, John W. Imlay, Esq., and the secretary, Augustus Keefer, Esq., are now corresponding with English capitalists, and a prominent engineer is here in the interests of these gentlemen inquiring into the matter, and we hope to have the pleasure of announcing that satisfactory arrangements have been made.

Another important power has been granted the Ottawa, Waddington and New York Railroad and Bridge Company, which is fully explained hereunder.

#### A STEAMSHIP LINE.

The company have also taken power to construct and charter, purchase, own and navigate steam vessels and other craft on any of the lakes and rivers of Canada; and as the Canadian Pacific Railway will not be built from Thunder Bay on the north shore of Lake Superior for five years, they propose to put on a line of steamers from Thunder Bay to Morrisburg or Waddington to carry the wheat, etc. from the Northwest, returning lumber to the West.

#### RAILROAD AND OTHER NOTES.

Work on the removal of the Point Frederick shoal at Kingston Harbor will be resumed shortly.

The St. Lawrence and Ottawa Railway Co. are raising the trestle work of all bridges along their line seven feet above the top of the cars.

Manning & McDonald are making good progress on the Canal and lock work at Finelon Falls.

The Murray Canal will cost over \$850,000, and a vote for \$200,000 will be asked from next Parliament, to continue the work.

The wooden bridge on the Canadian Pacific Railway over the Mississippi River at Almonte was removed on the 28th ult., and replaced by an iron structure, consisting of ten spans. The time occupied in removing the old bridge and completing the new one was only twenty hours.

Next July the Kingston and Pembroke will be opened to Pembroke. This will give the Canadian Pacific another outlet via Kingston.

#### A NEW ENTERPRISE.

There is a large field in Canada for Americans and other enterprising men, and the American Railway Construction Company of Chicago, aware of the fact, have opened an agency for the introduction of their Monarch Track-laying Machine, which, as a practical and scientific machine, is unequalled by any other. The company are composed of gentlemen of high standing, and their new enterprise will no doubt be successful.

The Portage and Westbourne will push their road through vigorously with their capital increased to \$5,000,000, and a land grant of 6,400 acres per mile which the Government promises for extending the road to Prince Albert. They intend immediate operations.

W.

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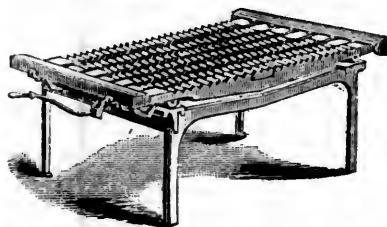
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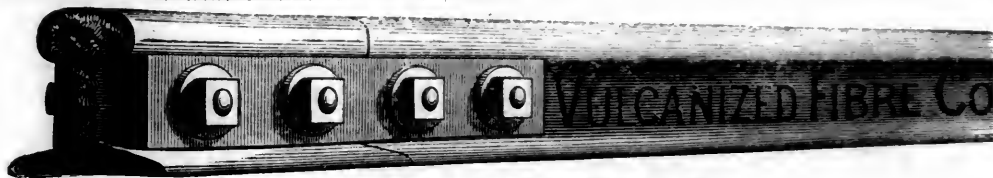
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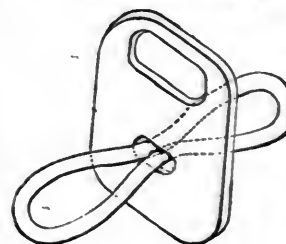


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## SWEETLAND SAFETY LINK GUIDE.

Patented August 29, 1882.



The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six pounds.

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## Improved Railroad-Car Axles.



Mr. J. R. BAKER, of Jersey City, N. J., has patented certain inventions which are of great importance to the railway and traveling public. They relate to a question which was one of the most important of those discussed before the Master Car Builders' Convention in New York City, June, 1881, namely, that of journal bearing. At the convention of the succeeding year, held in Philadelphia, Baker's Patent Universal Car-Axle Joint and Self-Adjusting Bearing and Patented Automatic Lid-Lock were exhibited and cordially approved. Since, as before that time, the inventor has received many flattering proofs of the value set upon his improvements



by men having a thorough knowledge of machinery. Among them is their use on three leading American railways. Over ninety-thousand miles have been run by a car fitted up with the Joint, and it is still running in perfect running order, and without having had a hot bearing during the whole time.

The principle of Mr. Baker's perfect adjustable bearing for car-axes is that of the ball-and-socket joint, the same as that of the hip-joint in nature. A convex plate, which is a section of a perfect sphere, is cast upon the back or upper surface of the journal box, and a plate of a concave form, which is the exact converse of this, is attached by a "bayonet joint" to the upper

inside of the oil box, the upper part bearing perfectly upon the lower. This mode of hanging allows of an independent motion of the truck, by which it accommodates itself to any inequality of the rails, saving the wear of both, and avoiding jolting. Free play is allowed for a limited distance in almost any direction, and the torsion strain so destructive to the running gear as well as the rails, is wholly avoided. As the friction is diminished in a great degree, the cost of traction is correspondingly decreased, and the delay and vexation arising from hot boxes almost wholly overcome.

By this method the weight is centralized and the friction is distributed over twice the surface used in the ordinary journal bearing, and the friction at any given point is correspondingly lightened. The usual collar at the end of the axle is dispensed with, avoiding a prolific source of friction and accidents. The improvement can be applied to any car without alteration of the truck or pedestal. It is equally applicable to steamship shafts, saving the heavy torsion which has resulted in the fracture of so many shafts of late, and its introduction would be the means of preventing a proportion of shipwrecks. The universal joint could be substituted for the rigid bearing in all mill shafting, with useful results.

The common rigid bearing has a tendency to keep the train in a straight line, so that in running curves not only the journal is cramped and heated, but the flange of the wheel is jammed against the inside of the rail, by which action both are worn away rapidly, and the train is often thrown from the track. With the self-adjusting journal all of these difficulties are avoided, thus securing the desiderata of economy, speed and safety.

Mr. Baker's automatic lock for the axle box is dust tight, and closes and locks itself by its own weight.

Further particulars can be procured from the National Safety Car Bearing Company, No. 62 Cedar street, New York City, or from the patentee, Mr. J. R. Baker, No. 200 Third street, Jersey City, N. J.

A PATENT has just been taken out in Washington for an invention which is designed to save time and trouble in preventing the blockade of street railway cars in case of fire or other obstructions. It is termed a "turn-table," and is constantly attached to each car. Through its operations the conductor can hoist the car when fully loaded with passengers, turn half around on the cross track in a few seconds, and so run to the next corner, repeating the operation wherever necessary until he returns to his own line beyond the point of blockade.

A PIOUS Scotchman had thanksgivings offered in church for his safe return from "his long and perilous journey to that far-away place called London."

## Richardson's Car-Coupling.

RICHARDSON'S Self Coupling for freight cars is a new invention issued Jan. 2, 1883, to do away with brakemen going between cars, and thus risking life or limb. The reasons which Mr. Richardson claims make his coupling superior to all others are as follows:

As the coupling has a large bell mouth, a link from an opposite car, even if a few inches higher or lower, will by striking anywhere inside the mouth slide into position and the pin drop, thus coupling itself.

It is all cast-iron, and is ready to be put together as soon as cast, thus putting the cost of the same at a very low figure.

It will couple with any link or pin now in common use.

It will not be necessary to change the car-frame, for it will fit any frame where a strap is used on the tail end without changing so much as a bolt. Mr. Richardson also has an attachment for uncoupling, which will be put on when desired without extra cost. Railroad companies will be allowed to thoroughly test this coupling before paying for it.

For further particulars and price address E. M. Richardson, Post-office box 108, Lacomia, N. H.

## Sargent's Apparatus for Converting Motion.

MR. THEOPHILUS SARGENT, of Hallowell, Maine, has been granted a patent on his apparatus for converting motion. The invention relates to the lever contrivance for producing rotary motion by means of a couple of toothed segments on the lever working loose pinions on the shaft, which alternately gear with it by ratchets and pawls, one going forward and turning the shaft, while the other is going backward to the starting-point; and consists of a stopping and reversing attachment. The new apparatus is a direct application of the lever power to a rotary motion, is simple in its principle and gear, and gives great speed and strength. It possesses the advantage of a stop and reverse gear, so effectually contrived that the reverse motion, which is communicated in a moment, is equal in force and rapidity to the forward motion. The same motion of the lever operates the stop and reverse gear as accomplishes the main purpose of the invention.

Sargent's apparatus for converting motion is intended particularly for being annexed to other powers, which, its inventor claims, can be increased five times by its use. It can be made strong as necessary for sixty or even as high as a hundred horse-power. The apparatus promises value as a hand-power applied to cars, side-wheel boats and other machinery of that nature. It fills a want long felt, and is likely to come into wide-spread use. Mr. Sargent is prepared to negotiate for its sale at a cheap price, and manufacturers and others interested, are invited to open a correspondence with him.

THE Postal Telegraph, which it is expected will be completed between this city and Chicago in a few days, will not, it is said, be opened to the public until all that is claimed for the system shall have been demonstrated.

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### Electrical Railways in Ireland.

THE making of the electrical railway between Portrush and the Giant's Causeway marks an era in the history of locomotion. If the sanguine hopes of its projectors are realized it will be not less remarkable in the history of Ireland. Nature has left her destitute of those stores of force in the shape of coal mines with which England and Scotland have been so plentifully favored; but she has dowered her with an inexhaustible supply of force in the shape of waterfalls, which have run to waste from before the days of Finn McCoul until now. "The costless drainage of a wilderness," which on Canadian rivers Mr. Hussey Vivian found busy converting, almost without the intervention of a human hand, beams of rough-hewn timber into finished doors and windows and all manner of wood-work, has never been harnessed to the service of man in Ireland. The advent of an electrical age promises to change all that, and the Portrush Railway may be the forerunner of the great things which are yet to come, when the Irish have learned to employ the drainage of their hills in driving the machinery of their mills. Turbines planted on the River Bush are to generate the electricity which is to drive the tram cars from Portrush to the Giant's Causeway. The directors, it is said, are seeking to purchase a waterfall for the same purpose, and it is confidently anticipated that the railway will be worked, as the city of Poona is said to be lighted, by thunderbolts forged by water.

There is something strangely incongruous in the association of the Giant's Causeway, with its mysterious legends, dating far back beyond the gray dawn of history, with the latest development of the applied science of the nineteenth century. That the first electrical tramway outside Berlin should have been started in a remote corner of Ireland is due to the enterprise of the High Sheriff of Antrim, Dr. Traill, whose namesake, Mr. W. A. Traill, has acted as engineer of the line. There have been many electrical railways laid down in various places, but hitherto they have never been constructed by public companies for the purposes of profit. As the Stockton and Darlington Railway is justly regarded as the first of modern railways, although it was preceded by many railways of different kinds, so this Portrush electrical line may fairly claim to be the first of its kind not only in Ireland but in the world. The first electrical locomotive was tried on the Edinburgh and Glasgow Railway forty years ago. It crawled along at a rate of four miles an hour, and was promptly laid aside. It was not till the invention of the modern dynamo-electric machine that the substitution of electricity for steam began to be regarded as feasible. Every one has seen the toy tram car in the grounds of the Crystal Palace driven by electricity, on which a curious public rides at 6d. per head per journey. Similar playthings have been at work at the various electrical exhibitions at St. Petersburg, Munich, Dusseldorf, Brussels, and Berlin. At the electrical exhibition in the Palais d'Industrie at Paris the principle was applied in more practical fashion. A tram car moved by electricity, transmitted from a stationary engine by an overhead cable, brought

loads of passengers to the palace from the Place de la Concorde. In a couple of months it conveyed 82,000 passengers to and from the exhibition; but as the fare for the short distance was at the rate of half a crown a mile it afforded no guide as to the commercial advantages of the new motor. An experiment was made on the Leytonstone tramway some months ago, when a tram car was fitted up with Faure accumulators and set to work over a mile and a half of private tramway. Its speed was seven miles an hour, but the weight of the car with the accumulators was five and a half tons, and although enthusiastic promoters declared that it would reduce the cost of traction by one-half the experiment has not been renewed.

A very successful application of the electric motor has been made by a large linen-bleacher in Calvados. The electric locomotive, which generates no smoke, passes up and down the bleaching-fields, winds up the bleached linen, and conveys it to the works. This, however, is a specialty entirely in private hands. The only public tramway worked by electricity is that of the Messrs. Siemens in Berlin. They at first projected an abomination in the shape of an overhead electric railway six miles long, but the Emperor would not allow the Linden to be disfigured, and the projectors contented themselves with a short line, a mile and a half long, between Lichterfelde and the Military Academy. The new motor was also employed for a time on the tramway line between Charlottenburg and the Spandauer Bock. The current at first was passed along the rails from a stationary engine, but it is now conveyed by cables slung in mid-air, a frightful addition to the horrors of modern civilization. Although it can be driven at the rate of thirty miles an hour, the regulation pace is not more than ten. It is convenient, simple, and manageable, but it has not been a financial success. On the other side of the Atlantic Mr. Edison has made a private line, three and one-half miles long, to his works in Menlo Park. He sends the current along the rails, and claims to be able to drive his car at the rate of fifty miles an hour. He estimates the saving at fifty per cent upon the cost of steam; but Mr. Edison is an enthusiast, whose estimates do not always correspond with his results. He has, however, achieved a sufficient measure of success to secure orders for several electric motors, which are to be used on a new Swiss line. An electric railway is projected in Fairmount Park, Philadelphia, and there is some talk of putting up an overhead electric railway in Paris, to run from the Arc de l'Etoile at the head of the Champs Elysées to the Place de la Bastille at the other side of the city. These projects, however, are as yet nothing more than projects, and will probably not be carried into execution until it has been proved that electric tramways will pay.

The Portrush tramway is, however, an accomplished fact. It has been built in the old-fashioned way by a company of shareholders, who raised £45,000 in ten-pound shares, to construct six miles of rail. Being worked by electricity, there is no necessity either for the heavy railway needed to support the weight of a steam engine or for the granite-paved track required for horse traction. Another great ad-

vantage which cannot be secured elsewhere is that the tramway is laid on one side of the road, and from this raised trampath all ordinary traffic is excluded by a granite curbstone. The gauge is only three feet, and to twice that extent the company monopolize the highway. The cost of construction under these circumstances has only been one-quarter of that incurred on tramways less favorably situated. The steel rails are laid level with a graveled surface, and parallel to them extends a third iron rail, which is used to conduct the current from the dynamo machine to the cars, contact being effected by means of an electric brush. The whole of the electricity required is supplied from the central station at Portrush. When the turbines fail to yield the requisite power, steam will be employed to generate the electricity. The line will be used not merely as a tramway, but also as a railway for the conveyance of goods and minerals, electricity being in all cases the only motive power employed. According to the sanguine estimate of the promoters, whereas the cost of working the line by horses would be 11d. a mile and by steam 7d., they expect to effect it at a cost of 1d. If they do this their success is assured. But the chances are against them. No electric motor has as yet been able to earn a dividend, and it will be an agreeable surprise if the new railway to the Giant's Causeway should prove an exception to the rule.—*Pall Mall Gazette*.

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The part of an engineer is one of danger even upon the best regulated railroad. The safety of the man depends no more upon his own skill and self-possession than upon that of his fellow engineers running their trains "both in the front and to the rear of him." He must have equal confidence in himself and in those who are at the same time relying on him. Then again he encounters every moment the treachery of iron, and it is the nature of iron to be treacherous. Human experience and skill have done and are still doing much to modify it, but it is yet an unlearned lesson and probably never will be learned. The conditions are too many and too various. An iron or steel rail, a chilled or steel tire, and imperfect but apparently perfect rod, bolt or key may at any time put in imminent peril the life of the engineer. The engineer who is running against him may be less competent and intelligent. The intricate machinery of his own or his comrade's watch may have suddenly stopped or become uncertain in its movement and thus placed him in jeopardy. The cold of winter and the heat of summer change all the conditions of iron, whether it be the track, the various parts of the engine or rods, cords and braces which constitute a bridge, and to each one of these separate risks and contingencies the workmen upon the train and especially the engineer are exposed while the passenger is comparatively safe.

The engineer, like the pilot at the helm of a ship, is at the extreme point of responsibility and danger. His eye is always strained looking to the front, often through darkness and fog, and his ear is equally watchful for signals of danger from the rear, and whether the danger comes from ahead of him or from a broken rail, wheel or brake behind him, it becomes his supreme duty to stand by his throttle, to let on or shut off steam as in his judgment, made up in an instant of time, seems best, and when his own life is at stake, a moment when the very highest order of personal courage and self-possession is demanded. I have been a per-

sonal witness in many instances of the wonderful self-control of the class of men I am trying to describe, but as I have already promised, will not refer to any particular one, although I am satisfied that in one instance my own life was saved by the authority exercised over me, his superior officer, by an engineer in great emergency. He seemed all at once to exercise all the authority of a president, superintendent and board of directors, and yet his right hand never left the throttle and the engine crossed the bridge upon the cross-ties in safety. Its span was 160 feet, but at the time it seemed to me to be a mile in length.

Engineers, as a rule, are reticent men. During a trip they say but little even to their firemen, generally expressing their orders either by glance or a motion of the hand. All the while their whole attention is given to their peculiar and hazardous duties, the safety of their own lives, those of passengers, and the custody of property. When the train is in motion the eyes of the engineer are always on a strain, and he seems to feel and express through his whole frame the responsibility entrusted to and resting upon him, and the sense of responsibility never wavers until his destination is reached. Then with a look, and often an expression of relief, he drives his iron horse to his stall, grooms him and walks contentedly home. When his day's work is over you will generally find him either in his own house or at the "round house" talking to his comrades, comparing notes with them, directing his fireman and sometimes reading a newspaper. In an experience of twenty years I never saw a company of locomotive engineers engaged in personal altercation or even in angry discussion. Their business naturally inclines them to mutual friendliness, as their dangers are common and each one relies for his own safety upon the caution and skill of his fellow. Hence the origin of that already noble organization in this country, known as the "Brotherhood of Locomotive Engineers," a most worthy society, deserving of the greatest public support and confidence.

It is sometimes said that engineers become indifferent to danger, that this indifference is a natural result of their occupation; but this is by no means true of them as a class. There may be exceptions, but a man indifferent to danger becomes reckless and soon forfeits his place. A good mechanic, a skilled engine driver, like a good soldier, understands his danger, looks it in the face and enters upon the discharge of his duties with perfect intelligence, and therefore with true courage. He contracts to lead a certain life, with a full knowledge of its peculiar perils, and this is the highest order of courage, and the longer he lives upon the "foot-board" and deals with the terrific power of steam and becomes more aware of its uses and of the fearful responsibility resting upon him, the more thoughtful, patient, considerate and watchful he becomes.

In this connection, and not at all in the way of romance or sentiment, I will add that I was always glad to hear that an engineer was about to get married, and I take the liberty to advise every member of the "brotherhood" to take unto himself a wife as soon as possible, and

for many reasons. First, in getting a wife, if he don't happen to make a mistake in his choice, and engineers are not in the habit of making mistakes, he obtains a home, kept in order by willing hands and a loving heart, and always in readiness for him after his trip of trial and danger, where he is sure of wholesome food and that kind attention which is wonderfully restful and quiets the nerves which may have been unduly excited by a more than usually dangerous run. Then again, when he is standing at his post of duty and danger in the darkness and storm, and confronting the unknown perils of fog, bitter cold and treacherous iron, he will be all the more wary and watchful as he thinks of his home, his wife and his children who are thinking of him and praying for him as he bares his breast to the storm in the discharge of his duty for their sake and support. The greater his anxiety about his home, the more perfect his fidelity to his immediate trust and the more complete his self-possession. The sense of great responsibility is always the highest incentive to the exercise of the greatest skill, energy and watchfulness, and this is especially true of a locomotive engineer, and its exercise in the moment of anticipated danger is a tremendous strain upon his brain, his personal courage and his whole nervous system. He becomes accustomed more or less to these exciting risks and dangers, but the wear and tear upon his nervous energies can hardly be estimated, although in his own brave opinion he may be unconscious of it.

It is a serious question as to the number of years which an engineer can with safety to himself and his trust be permitted to run his engine, and one which the writer has studied with much care and anxiety. My conclusion is, that he ought not to do so more than from twelve to fourteen years. I am assuming an average time. Some strong men can withstand the strain for a while longer, others succumb at a shorter period. The trouble comes not with his brain, his will, or his skill, which latter only increases with his experience, but the perpetual jar and trembling of the engine acts directly upon the spinal cord, which, weakened and overstrained, produce nervous prostration, and nervous prostration means undue nervous excitement, and the latter, in the end, involves a loss of that energy and self-possession which are always essential to an engineer in his position of responsibility and danger. I am confirmed in this impression by the concurring opinion of an eminent physician, who has had a large and long experience in treating the peculiar nervous affections incident to the life of railroad employes.

THERE is a tradition handed down from time immemorial that a lady can never write a letter without a postscript. If the latter is inevitable, an Esterbrook pen No. 333 will answer the purpose admirably.

MAN, being essentially active, must find in activity his joy, as well as his beauty and glory; and labor, like everything else that is good, is its own reward.—Whipple.

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## IMPORTANT ANNOUNCEMENT TO INVENTORS.

THAT department of the AMERICAN RAILROAD JOURNAL which contains descriptions of new inventions properly coming within its range of subjects, is regarded with great notice and favor, particularly by those directly interested in learning what the latest applications of mechanical ingenuity in railroading are, and by those who have produced inventions which they desire to make as widely known as possible.

The large and widespread circulation of this paper, its prestige as the oldest railroad journal in the world, and the weight attached to its contents by the general consent of leading railroad men in all countries, give such value to its carefully prepared descriptions of new machinery and appliances as cannot be found outside of its columns.

The interest manifested by inventors in supplying us with information of their doings, and the eagerness with which this is received, encourage us to give an increased attention to that department of this paper treating of new inventions.

We therefore repeat our invitation to all persons who have produced what they regard as improvements coming within the range of railroad operations, to communicate with us promptly regarding the same.

All matter sent us will be thoroughly examined and considered, and no inventions in our opinion likely to be practicable and useful will be passed over without receiving due attention from us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF JANUARY 30, 1883.

- 271,206. Car-Brake: William H. Adams, Boston, Mass.
- 271,207. Brake-Shoe: Hubert A. Banning, New York.
- 271,216. Draw-Bar for Cars: Henry Burkhardt, Chicago, Ill.
- 271,238. Oiling-Pump for Steam Engines: William Heston, Mount Union, Ohio.
- 271,245. Speed-Regulator: Horace F. Hodges, Chelsea, Mass.
- 271,255. Spark-Arrester: Henry Millholland, Philadelphia, Pa.
- 271,261. Watch-Tower and Signal-Lantern: Clair S. Parkhill, Hornellsville, N. Y.
- 271,268. Spike-Extractor: Albert P. Prou, Woodhaven, N. Y.
- 271,269. Draw-Bar: Thomas B. Purves and Thomas C. Craven, Greenbush, N. Y.
- 271,272. Car-Coupling: Alvah Rice, Rochester, N. Y., assignor of one-half to Stephen Wheeler, same place.
- 271,280. Car-Wheel: Samuel T. Welman, Cleveland, Ohio.
- 271,287. Speed-Governor: Parker Wells, Lynn, Mass.
- 271,296. Railroad-Signal: Augustus H. Laker, Hartford, assignor of one-half to Henry L. Finney, South Windsor, Conn.
- 271,300. Metallic Packing for Piston-Rods: Norman C. Bassett, Philadelphia, Pa.
- 271,315. Steam-Engine Governor: Warren H. Craig, Lawrence, Mass.
- 271,316. Vise: Daniel Davis, Elmira, N. Y.
- 271,327. Steam-Engine-Reserving Mechanism: John Frazier, Searcy, Ark.
- 271,329. Steam-Generator: Edward F. Gordon and Horatio Hobbs, Concord, N. H.
- 271,337. Car-Door: Amos B. King, Lake View, Ill.
- 271,343. Traction-Engine: Philologus H. Loud, Williston, S. C.
- 271,348. Car-Signal: John A. Miller, Paducah, Ky.
- 271,352. Cut-Off-Valve Gear: Eugene O'Neil, San Francisco, Cal.
- 271,363. Cash Register and Indicator: James Ritty and John Birch, Dayton, assignor to Jacob H. Eckert, Cincinnati, Ohio.
- 271,368. Wood-Turning Lathe: Albion I. Sanborn, San Francisco, Cal.
- 271,373. Washer: Samuel H. Shively, Fremont, Ohio.
- 271,379. Car-Coupling: Columbus B. Tucker, Angerona, W. Va., and Josephus Tucker, Coolville, Ohio.

- 271,381. Brake-Rod for Cars: Matthew Van Tassel, Brooklyn, N. Y.
- 271,394. Car-Coupling: Nicholas Ambuehl, Lone Grove, Fayette county, Ill.
- 271,400. Steam-Trap: Joseph H. Banks, New York.
- 271,414. Nut-Lock: Geo. Cade, Milan, Tenn., assignor of one-half to H. P. Miller, same place.
- 271,415. Car-Door Fastening: James B. Calkins, Pacific, Mo.
- 271,425. Elevated Railway: George W. Cook, Chicago, Ill.
- 271,431. Machine for Milling Links for Engines: William H. Deuney, Lancaster, Pa.
- 271,435. Switch-Lock: Daniel P. Driscoll, Pittsburg, Pa., and Joseph H. Dugan, Dennison, Ohio.
- 271,459. Rotary Motor: Horace F. Hodges, Chelsea, Mass.
- 271,462. Lamp for Railway-Cars and other Purposes. James L. Howard and Charles P. Howard, Hartford, Conn., assignors to James L. Howard & Co., same place.
- 271,464. Traction-Engine: Edward Huber, Marion, Ohio.
- 271,474. Derrick: Patrick Kelly, Poughkeepsie, N. Y.
- 271,477. Steam-Boiler: Frank F. Landis, Waynesborough, Pa.
- 271,478. Railway-Buffer Stop: Alfred Andrew Langley, 10 Kent Terrace, Clarence Gate, Regent's Park, county of Middlesex, England.
- 271,482. Method of Setting Steam-Boilers: Walter J. F. Liddell, Charlotte, N. C.
- 271,486. Railway-Switch: Phillip Lyon, East Stroudsburg, Pa.
- 271,501. Car-Coupling: Benjamin F. Metz, Medway, Ohio, assignor to himself and John Kauffman, same place.
- 271,534. Switch and Signal Mechanism for Railways: Charles Stewart, Camden, N. J.
- 271,514. Steam-Boiler: Henry H. Supler, Philadelphia, Pa.
- 271,543. Mail-Bag Catcher and Deliverer: Edward W. Thompson and Albert M. Moore, Lowell, Mass., assignors of one-third to James W. Bennett, same place.
- 271,547. Train-Order Signal: John S. Trites, Moncton, New Brunswick, Canada, assignor of one-half to Edwin Gillmor Russell, St. Paul, Minn.
- 271,553. Car-Coupling: William T. Van Dorn, Lincoln, Neb.
- 271,555. Rotary Engine: John C. Wands, St. Louis, Mo.
- 271,573. Railroad Chair and Joint: Thomas J. Christy, Olney, assignor to Francis M. Godall, Marion, Ill.
- 271,575. Feed-Water Heater: Horatio G. Eckstein, Philadelphia, Pa.
- 271,577. Valve-Gear for Steam-Engines: John Frazier, Searcy, Ark.
- 271,581. Signal for Cars and Vessels: Oliver C. Knipe, Norristown, Pa.

## A Railroad Reporter's Account of a Wedding.

THE railroad reporter, with a map spread before him, was busily engaged in projecting, on his own responsibility, a line to connect the J., C. and I. and W., K. and N. roads, and to form an important feeder for both. While he was thus engrossed, the city editor wheeled around in his chair, hitched up his pink Italian suspenders, and said:

"Are you much of a ladies' man?"

"Yes I am," replied the railroad reporter, with a smile, "although I may not look it. At one time I was a regular standard gauge, steel rail, stone ballast swell, but of late years I have uncoupled from that sort of business, and have been running on a different line."

"Do you think you can handle a rechurched affair among the 'high lifts' and do justice to the tout ensemble of the soiree?"

"I think I can."

"Well, if that is the case, go up to the residence of old Col. Jinglesex and report the wedding of his daughter. Pay strict attention to

the style of the bride's costume, and write up a readable description of it."

The railroad reporter rubbed up his eyeglasses, took his coffin-lid coat from the bottom of his escritoire, borrowed a fresh collar from the death editor, and went to the wedding. When he returned his report read as follows:

"Last night quite a large number of guests were present at the residence of Col. Jinglesex to witness the marriage of his lovely daughter with our esteemed young fellow-citizen Major Raoul Baptiste McGilligan. Col. Jinglesex was the general manager of the entire guest system, and had his headquarters established in the dining-room, and only left his post and the side-board, where the gentlemen were often side-tracked for repairs, to go through the parlors on a tour of inspection. Mrs. Col. Jinglesex acted as superintendent and yard-master, and most of the time was employed in the kitchen, where she had the supper courses made up and saw that they left on schedule time. The whole thing was a real ten-foot driver, Miller platform affair, and will long be remembered by those who were fortunate enough to receive invitations. A few moments before the arrival of the preacher who was to pull the bell-cord for the matrimonial train, old Col. Jinglesex left the side-board, and started up grade with a heavy load. The consequence was he slipped an eccentric, and came into the parlor running on one side, but was flagged down in time to prevent him jamming his headlight through a bay window. The old gentleman, in stopping to fill his tank so often, lost the right of way and did not witness the ceremony.

"The bride was a slender beauty, and her eyes were of a peculiar pea blossom blue color, and when her lips parted in a smile they looked like some one had opened a red pocket-book. She was dressed in a flowing robe of yellow tinted bobbinet muslin *a la ecru* looped up at the sides with a Hungarian pompadour of blue grenadine and fichus of Queen Anne gimp. The dress was cut on an incline of forty-eight degrees across the shoulders, and curved around under the left arm. The bosom of the fair bride was covered with a trestle work of Louis XIV. lace, and her waist was 'surfaced up' and 'filled in' with artificial flowers, made attractive by several narrow-gauge short lines of red trimmings, which skirted around and centered at a common terminal point on the crest of her polonaise. Down the front of the robe was a midland route of antique buff serge intersected by numerous feeders of costly fez marino.

"The wedding was bon ton—everything moved on schedule time, and along the whole line not a 'low joint' or 'high center' jolted the gentle glide of happiness."

RECENT weather upon the Atlantic reminds us of experiences in which books tumbled headlong upon their owner's head, as if despairing of getting their contents into it by any other method. Trunks and portmanteaus skipped about as though bewitched, and the saloon echoed with a "crockery chorus" worthy of Handel himself.

A new road is to be surveyed between Union City and Erie, Penn.

# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 7.]

NEW YORK, FEBRUARY 17, 1883.

[WHOLE No. 2,442.—VOL. LVI.]

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the rails road and kindred interests; in short, about all matters which the readers of such a paper as this are gratified to find within its columns.

## ORGANIZATION.

THE annual meeting of the stockholders of the Massillon and Cleveland Railroad Company was held at Massillon, Ohio, on the 6th inst., at which the following board of directors was elected: Lewis H. Myer, Charles W. Cass, J. N. McCullough, Simon Perkins, John Sherman, Amasa Stone and P. G. Albright.

THE directors of the Delaware Division Canal Company, elected at the annual meeting of the stockholders held in Philadelphia on the 6th inst., are: J. W. Woolston, I. V. Williamson, J. S. Harris, E. W. Clark, F. C. Yarnall, S. F. Corlies, F. R. Cope, E. Roberts, Jr., and T. McKean. The officers are: President, J. W. Woolston; secretary and treasurer, Henry Giles.

At the annual meeting of the stockholders of the Philadelphia and Erie Railroad Company, held in Philadelphia on the 12th inst., the following board of managers was elected: J. N. DuBarry, Wistar Morris, Strickland Kneass, Samuel Gustine Thompson, John P. Wetherill, N. Parker Shortridge, Henry M. Phillips, Henry D. Welsh, William J. Howard and William L. Elkins.

At a meeting of the stockholders of the Scioto Valley Railroad Company, held at Columbus, Ohio, on the 8th inst., the following directors were chosen: William Adams, Edward T. Winslow, Horace Porter and Frank H. Davis, of New York; William W. Franklin, George Skinner and Joseph Robinson, of Columbus; Marcus Boggs, of Chillicothe, and George Davis, of Portsmouth.

THE York Harbor and Beach Railroad Company, which will build a narrow gauge from Kittery to York Beach, Me., has been organized at Portland by the election of the following named directors: Edward S. Marshall of York, Frederic E. Potter of Portsmouth, N. H., John C. Stevens, Henry E. Evans, Jeremiah P. Sampson, Samuel W. Junkins and John E. Staples of York.

THE election for directors of the Huntingdon and Broad Top Mountain Railroad and Coal

Company, held in Philadelphia on the 6th inst., resulted in the choice of the following board: B. Andrews Knight, Rathwell Wilson, John Devereux, I. V. Williamson, James Long, James Whitaker, Joseph H. Trotter, William P. Jenks, C. V. Wharton, Thomas R. Patton, Jacob Naylor, Spencer M. Janney and William J. Barr. President, B. Andrews Knight.

At the annual meeting of the stockholders of the Boston, Barre and Gardner Railroad Company, held in Worcester, Mass., on the 7th inst., the following directors were elected: Calvin Foster, W. W. Rice, Samuel E. Hildreth, S. Salisbury, Jr., Samuel R. Heywood, A. G. Bullock, H. M. Witter, William H. Morse, E. W. Vaill of Worcester, N. D. White of Winchendon, and Franklin Eaton of Gardner. The directors organized with H. M. Witter, president, and William E. Starr, clerk and treasurer.

At the annual meeting of the stockholders of the Burton Stock Car Company, recently held in Boston, Mass., the following directors were elected: Percival L. Everett, James Sturgis, Joel M. Holden, E. F. Perkins, Louis C. Southard, Henry A. Holden, and George D. Burton. The officers are: President, Joel M. Holden; secretary and treasurer, George D. Burton; assistant secretary, Clarence Hale; general manager, Edwin F. Perkins; counsel, Louis C. Southard. The office of the company is at 194 Washington street, Boston, Mass.

At the annual meeting of the Ottawa and Gatineau Valley Railway Company, held in Ottawa on the 7th inst., the following gentlemen were elected directors for the ensuing year: J. M. Currier, C. H. Mackintosh, M. P., J. Murray Mitchell, Luke Henry, of Aylwin; and Dr. Duhamel, of Hull. Subsequently a meeting of the newly elected directors was held, when the following officers were re-elected: J. M. Currier president, C. H. Mackintosh, vice-president, J. Murray Mitchell, managing director and engineer-in-chief; H. B. Mackintosh, secretary.

ELECTIONS were held at Pittsburgh, Penn., on the 8th inst., for directors of the following three street car companies, the routes of which are all inside of the city limits, viz:—Belt Railroad Company—President, Robert Liddell; directors, J. J. Speck, Richard N. Wray, J. L. Abell, J. H. McCreery, W. C. Erskine, Morton Hunter, Norman May. Twelfth Street and Ar-

lington Avenue Railroad Company—President, J. J. Speck; directors, Robert Liddell, Richard N. Wray, John L. Abell, J. H. McCreery, W. C. Erskine, Morton Hunter, Norman May. Pittsburgh and South End Railroad Company—President, J. J. Speck; directors, Robert Liddell, Richard N. Wray, John L. Abell, J. H. McCreery, W. C. Erskine, Morton Hunter, Norman May. J. H. McCreery, Esq., was elected secretary and treasurer of the three companies.

A MEETING of the bond and stock holders of the Marietta and Cincinnati Railroad Company was held in Chillicothe, Ohio, on the 7th inst., pursuant to the order of the Ross County Common Pleas Court, at which the name of the company was changed to "Cincinnati, Washington and Baltimore Railroad Company," and the following board of directors elected: Robert Garrett, T. Edward Hambleton, Samuel Spencer, J. Carroll Walsh, of Baltimore; W. T. McClintock, of Chillicothe; Orland Smith, of Columbus, Ohio; and George Hoadley, James D. Lehmer, and J. L. Keck, of Cincinnati. The directors of the Cincinnati, Washington and Baltimore Railroad Company met in Cincinnati on the 8th inst., and elected Orland Smith president, Charles F. Low secretary and auditor, and W. E. Jones treasurer. J. H. Stewart has been made general superintendent, T. P. Berry, general passenger agent, and R. M. Frazer, general freight agent.

## INCORPORATION.

ARTICLES of incorporation were filed at Columbus, Ohio, on the 7th inst., of the Miami Valley Railroad Company, from Munster, Auglaize county, to Troy; capital \$450,000.

ARTICLES of incorporations were filed at Albany, N. Y., on the 10th inst., of the Waterford and Cohoes Railroad Company, capital \$25,000, to run from Waterford to Cohoes.

THE Youghiogheny and Elizabeth Railroad Company has made application at Harrisburg, Penn., for a charter. The road is to run from the Youghiogheny River at Buena Vista to the Monongahela River at Elizabeth—a distance of ten miles. C. B. Johnston, of Meadville, is president, and the capital stock is \$50,000.

ARTICLES of incorporation of the Osceola and Malden Short-Line Railroad, with a capital of \$300,000, have been filed in the office of the



Secretary of State of Arkansas. The road is to be built from Osceola, Ark., a distance of sixty miles, to Malden, Mo. The directors are John Drive, W. B. Edrington and W. J. Bowen, of Osceola, and Caldwell Bradshaw, of Little Rock.

THE Vincennes and Ohio River Railroad Company was organized in Indiana on the 10th inst. with \$1,000,000 fixed as the capital stock. Thirteen directors were elected: Albert Netter, Gabriel Netter, Nathan Newburg, Charles Rice, George B. Kerper and Leo B. Newburg, of Cincinnati; P. R. McCarthy, Eugene Hack, H. A. Foulks, G. F. Montgomery and J. S. McCoy, of Vincennes; R. M. Welman, of Jasper, and O. B. Stein, of Otwill.

ARTICLES of incorporation have been filed at Indianapolis, Ind., of "The Manufacturer's Belt Railroad" of Terre Haute, with a capital stock of \$100,000. The length of the road was stated to be two miles in length. The following gentlemen were named as the incorporators: Josephus Collett, Crawford Fairbanks, R. G. Hervey, R. Jencks, T. B. Johns, Sant. C. Davis and A. O. Johns.

### CONSTRUCTION.

Six miles of the Phoenixville and West Chester Railroad north from Frazer are now ready for the track.

THE Curtis's Bay branch of the Baltimore and Ohio, four miles long, will be ready for opening about March 1.

THE profiles of the survey of the Lake Borgne Railroad are completed, and in a short time active work will commence.

WORK was commenced on the Phoenixville tunnel of the Philadelphia, Phoenixville and Reading Railroad on the 7th inst.

THE Pennsylvania Railroad Company has determined to put down altogether five tracks between Harrisburg and Middletown.

THE Pensacola and Atlantic Railroad, connecting Pensacola, Florida, with the Apalachicola River, was completed on the 10th inst.

CHIEF Engineer Munroe, with his assistants, will soon commence the survey of a railroad line from San Antonio, Texas, to Fredericksburg. It is stated that this road will positively be built.

THE line of road between South Bend, Ind., and the New York, Chicago and St. Louis Railway, by which the Vandalia Northern Extension will make a connection with that line, is now being located.

THE line of survey for the new road of the Pennsylvania Railroad Company up the Schuylkill Valley has been completed, and should it be finally adopted, the work of grading will be commenced in a few days.

It is said that the line of railway to Bonne St. Anne, that great resort for multitudes of Catholics, has been begun, and that the promoters, including the Mayor of Quebec and several capitalists, are about to negotiate their bonds in Paris.

THE Northern Pacific Railroad Company has decided to build at once thirty-nine and a half

miles of road between Portland and Kalama, to connect its western terminus with the railroad system of the Oregon Railway and Navigation Company.

It is expected that the San Joaquin and Sierra Nevada Railroad will be completed to Ataville by the 1st of July, and will secure the travel to the Yosemite, as it will afford the shortest and most accessible connection with that famous valley.

THE new extension of the Philadelphia and Reading Railroad Company, running from Williamsport to Linden, a distance of five miles, is completed. This is the portion of the new road that was built to connect with the Jersey Shore, Pine Creek and Buffalo Railroad.

It is said that the necessary means for the completion of the Mexican National Railway from Laredo to the City of Mexico have been secured, and the work is to be put under contract. It is also said that work will be resumed on the International Extension to the City of Mexico.

At the annual meeting of the shareholders of the Ottawa and Gatineau Valley Railway Co., held at the offices, Victoria Chambers, Wellington street, Ottawa, on the 7th inst., important business connected with the enterprise was transacted, with a view to active operations being undertaken in the early spring.

Good progress is being made with the railway branch from Sackville Station, N. B., on the Intercolonial Railway to Cape Tormentine, thirty-nine miles, and it is expected to be finished by next fall. Cape Tormentine is the nearest point on the mainland to Prince Edward Island, and faces Cape Traverse, on the latter.

THE Bell's Gap Railroad, operated by the Pennsylvania Railroad Company, is to be made a broad-gauge road as soon as the spring opens. Fifty-pound rails are to be put down, and the line extended four miles to Witmer, where there are valuable coal openings, and later on to Punxatawney, in Jefferson county, when it will have a capacity of 100 cars per day.

On the 1st of March the Union Pacific Railway Company will open its Oregon Short Line to Shoshone, Idaho, which is a junction with the Wood River Branch, the distance being 321 miles from the junction of the short line with the main line, at Granger, Wyoming Territory. The stage lines into the Southern Idaho mining regions, which now run from Kelton, Utah, and Blackfoot, Idaho, will then run from Shoshone.

An engineer of the line surveyed for the Baltimore and Ohio Railroad to Philadelphia says that the route through Delaware county will pass a little south of Media, near Swarthmore, thence bearing north, pass below Coopertown, and cross the Pennsylvania Railroad just west of Ardmore, and thence via Mill Creek to its connection with the Philadelphia and Reading Railroad, and so on to New York by the Bound Brook route, and to Philadelphia by the Reading Road.

THE number of cattle in the United States is estimated at 33,753,365, valued at \$659,000,000. This does not include the bulls of the stock exchange.

### Electrical Railways in Ireland.

A CORRESPONDENT of the *Pall Mall Gazette*, referring to the recently published article on the "Electrical Railways in Ireland," which we last week transferred to our own columns, in which allusion is made to the "Giant's Causeway and Portrush Electric Tramway," goes on to say:

As the engineer and constructor of this tramway, you will allow me to amend a few particulars, as the concluding sentence is rather skeptical as to our prospects of financial success, even granting that the working of our tramway by electricity be successfully carried out. In all such companies the prospects of dividends largely depend upon the first capital cost or total cost per mile, but instead of, as is stated in the article referred to, raising £45,000 to construct six miles of tramway, or at the rate of £7,500 per mile, we are now able to assert—and can do so with full assurance, as our tramway is now complete—that our total prime cost will be less than one-half this sum, or about £21,000 for six and a half miles of tramway, and inclusive also of the cost of buildings, rolling-stock, electric plant, engines, law, Parliamentary, and engineering expenses. The "sanguine estimate of the promoters"—to the fact of our having no promoters our success is due—is stronger now than ever, and the experimental working hitherto of our electric motive power amply justifies a continuance of our "sanguine estimate." With regard to the working I need only mention that our electric car is able to ascend a long continuous hill of about one and one-half miles in length, and with a gradient of one in thirty-five, drawing a second car behind it, and work as readily and as well at a distance of two miles from the generator as adjacent to it. Although in a "remote corner of Ireland" we are not here disturbed by the troubles which distract our unfortunate country elsewhere, nor are we devoid of enterprise in offering the additional attraction to visitors to the Giant's Causeway of being carried there on an electric tramway.

### Railroad Train Weather Signals.

NEGOTIATIONS are pending between the Ohio State Meteorological Bureau and the Cleveland, Akron and Columbus Railroad Company with a view to the adoption of a code of signals to be displayed on their passenger trains, between Columbus and Cleveland, forecasting the weather for the next day, for the benefit of the agricultural and general community. The *Ohio State Journal*, from which the above was obtained, says that "the plain most likely to be adopted will be to display a large signal on each side of the baggage car, having it understood that certain colors and shapes of signal will represent certain conditions of the weather, as storms, rains, clearing or colder weather, etc. In this way, when the community along the line of the route get acquainted with the signals, and what they denote, they can tell the probable state of the weather for the next twenty-four or thirty-six hours." This will supply information to the farming community that will be very valuable, and may in time become a distinctive feature of the railroad service.

## CORRESPONDENCE.

[We pay no attention to communications unless the name and address of the writer are given, though the same will not be published if so requested. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to our department of journalism.]

## The Medical and Surgical Inspection Humbug.

TO THE EDITOR OF THE AM. R. R. JOURNAL.

DEAR SIR:—There have been admitted to the columns of your paper several communications from Dr. S. S. Herrick, whose official position is apparently Secretary of the Board of Health of the State of Louisiana. For the purpose of hearing what could be said on that side of the subject, doubtless, Dr. Herrick has been allowed full sweep to deal with it as he felt inclined. It is to be hoped, however, that his views are not endorsed in full by the AMERICAN RAILROAD JOURNAL. If I understand him aright, he proposes that every railroad company shall organize a medical staff, and that it shall institute a system of medical inspection of its employes to see whether they are suffering from malformations, constitutional taint, venereal affection, or other disqualifying ailment; this to be a permanent department of the railroad service.

He also advocates the use of railroad hospitals for cases of injury; that a supply of surgical appliances and instruments should be kept at stations, and carried on passenger trains; also that the carriages, buildings and grounds be made subjects of medical inspection; also that the transportation of live-stock should be brought under this medical supervision—all these as permanent features of administration. During times of epidemic disease like yellow fever, the Doctor would carry the inspection further, so as to make a sort of Quarantine Bureau in the railroad—besides that instituted by the Government.

Undoubtedly the Doctor has brought forward all the best arguments he could think of in behalf of his pet scheme; but he has not discussed the objections to it. The first and greatest objection strikes one at the first glance, that this is a species of petty inquisition into an affair of business, which, if not wholly needless, is liable to become an insufferable nuisance. The nearest analogy to it are the health requirements of National schools. It is true that the State undertakes to set up a standard of health among the attendants of public schools; but this is partly because of their public character, and partly because the public revenues are taken to maintain them. It might also be added, partly because the attendants are children of the poorer classes.

If the medical profession were agreed upon what are the true principles of physiological and therapeutic science, there would be more force in the Doctor's recommendations. It would be a disqualification in him as a guide on those subjects, if he did not know that the various schools of medicine are at variance, and that even among the teachers of the same school there is wide disagreement when we

come to the dark corners and fundamental questions of pathology. In other words, medicine is still a growing science, barely emerging from its infancy; although the statute laws in most of the States favor the existence of medical societies—a species of trades-union—the most severe critics of the current medical practice are to be found among the students and teachers of medicine themselves.

Another great objection to Dr. Herrick's ambition would seem to lie in the fact that the world has gotten along in its transportation for some hundreds and thousands of years, without doctors being directly concerned. In the first place, the people who conduct railroads and who travel upon railroads are a self-selected class; the average of physical and mental health among them is undoubtedly high, and it would not be claimed that if among the number of persons who travel, there were some who were sickly and diseased, but they would prefer to have physicians of their own choosing. This, indeed, is one of the fundamental difficulties of Dr. Herrick's plans, that the choice of physicians—like lawyers and preachers generally—is a matter of personal selection and preference; whereas, he seems to think that a doctor is a doctor, and that one doctor is about as good as another. All the world knows that such is not the fact. It may be true that one priest is as good as another; but not so with physicians and lawyers. Who is to select the medical staff which he would have saddled upon every railroad company? In order to determine a good doctor it is necessary one should know more than the average doctor does. At this time New York is agitated over the question whether a "regular" practitioner can, under any circumstances, consult with a homeopath.

It is true that vessels carrying passengers at sea are required to carry a ship's surgeon; and the reasons for this are obvious; though it may be still fairly questioned (surgery aside) whether ships would be better or worse off without the surgeons; and, indeed, there is a growing suspicion among biologists (and some responsible testimony might be cited to the point) that civilized communities at large would be better off if there were neither doctors nor apothecaries. This is not orthodox teaching in Louisiana, nor in the South generally; but the drift of enlightened practice is away from all the old drug-dosing customs, and toward distinctively hygienic and sanitary agencies, and foreshadows a time coming when there will be free competition in medicine as in other trades, and no close monopolies.

The suggestions, in regard to hospitals and temporary quarantine stations are well enough in their way, as is also the suggestion that surgical instruments, splints, bandages and lint should be kept in adequate supply at the various stations and on passenger trains; but this is not new. Long ago the Baltimore and Ohio, the Central Pacific, and some other roads had railroad hospitals in full operation; and quite recently the Pennsylvania Railroad Company has been giving instructions to its conductors how to proceed in cases of first help to the wounded. Whatever the railroad companies themselves may voluntarily do must be

presumed to meet some need, and to have some real merit, since they are the parties most interested in the safety of their passengers and the welfare of their employes; but all such efforts as Dr. Herrick seeks to popularize—of having the State thrust upon the public carriers any duties not strictly belonging to them—are in the wrong direction. There is a suspicion that the State may intermeddle too much—that its agencies are clumsy and unreliable. The political power can create offices, and men can be found to fill them and take the pay, but it is not so sure that they can or will perform the duties expected of them. Such an innovation savors more of the despotic polity of Europe than of free government.

Whatever the discussion may induce railroad companies themselves to do will be sure to inure to the benefit of the public. But to have legislation put a surgeon on board of every train, or circulating up and down a railroad, would be simply creating one more office to be obtained by political favor, which is inconsistent with strict attention to professional duty.

SUPERINTENDENT.

THE Cable Road in Chicago, most of the operating machinery of which was constructed by the enterprising firm of Poole & Hunt, of Baltimore, appears to have demonstrated during an exceptionally hard winter that it is less liable to obstruction than the horse railroads. During a recent snow blockade the horse cars could only make trips irregularly with teams doubled up, but the cable road, it is asserted, was not interrupted at all. The cable road in Philadelphia is now nearly ready for operations.

THE *Northwestern Lumberman* has published a statement of the white pine in the northwest for the past ten years. In 1873 the output was 3,993,780,000 feet, and in 1882 it had grown to 7,504,737,864 feet. From 1873 to 1882 inclusive, the white pine cut in the Northwest reached the enormous amount of 47,539,323,874 feet.

THE new Adirondack Railway Company, to which the road has been conveyed by the trustees of the purchasers at the mortgage sale, has assumed the management. George T. M. Davis of New York is president of the new company. C. F. Durkee continues as superintendent.

Who is it who, this time of yaire,  
Doth growl and snort and loudly swaire,  
And shake his fist and roach his haire,  
And speak of things that are not faire,  
And round about him fiercely glaire?  
It is, it is the passengaire.

THE Cincinnati, Indianapolis, St. Louis and Chicago Railway Co. has formed a traffic arrangement for through freight to Newport News with the Chesapeake and Ohio Railway Co. The rates will be the same as on other routes.

THE Jackson & Sharp Company of Wilmington, Del., shipped ten first-class passenger coaches to the Illinois Central Railroad on the 6th inst.

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We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing for our  
columns any items of personal information, which may  
come to their knowledge, and are adapted to this de-  
partment. We aim to record all new railway enter-  
prises in the United States and Canada, and to note  
the progress of construction on all new roads and exten-  
sions; and we request all concerned in railway building  
to give us early information regarding the above, that  
our reports may be as complete as possible.

Subscribers are requested to report to our office any  
irregularity in receiving the JOURNAL.

Contributed articles relating to Railroad matters gen-  
erally, Mining interests, Banking and Financial items,  
Agricultural development, and Manufacturing news, by  
those who are familiar with these subjects, are especial-  
ly desired.

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When writing to any of our adver-  
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ROAD JOURNAL.

## PRINCIPAL CONTENTS.

Organization.....	145
Incorporation.....	145
Construction.....	146
CORRESPONDENCE:—	
The Medical and Surgical Inspection Humbug....	147
EDITORIAL:—	
The Tide-Water Terminals Opposite New York....	148
Misdirected Warfare.....	148
The Future Growth and Influence of America.....	149-150
Interlocking Switch and Signal Apparatus.....	151
Stock Exchanges and Money Market.....	152-154
Railroad and Canal Dividend Statement.....	156
Railroad Earnings—Monthly.....	158
Our Canadian Letter.....	160
STREET CAR DEPARTMENT:—	
An Important Step Toward Unity of Action.....	162
Constitution, By-Laws and Officers of the A. S. R. A.....	162
Street Railway Notes.....	163
Shay's Improved Locomotive.....	164
List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, etc.....	166
Conversion of Wave and Tide Motions into Power, and its Transmission to a Distance.....	166

## THE TIDE-WATER TERMINALS OPPOSITE NEW YORK.

A VERY interesting problem in transporta-  
tion to New York is just presenting itself  
at the surface. Mr. Vanderbilt of the New  
York Central and Hudson River, and Mr. Gar-  
rett of the Baltimore and Ohio, are both large  
owners in the stock of the Central Railroad  
Company of New Jersey. They have a com-  
mon interest in preventing the control of that  
road passing into the hands of the Pennsylv-  
ania Railroad Company. Mr. Garrett's interest  
was acquired first; Mr. Vanderbilt coming in  
upon the entreaty of Mr. Gowen and the prom-  
ise of an interchange of anthracite coal busi-  
ness, which the Central had lost by the exten-  
sion of the Delaware, Lackawanna and Western  
to Buffalo. Mr. Garrett's purposes may be  
clearly discerned; he desired to have an exten-  
sion of his system to New York, and the link  
between Baltimore and Philadelphia is now  
under construction.

There is a want of harmony among the own-  
ers as to how far these purposes shall be car-  
ried out. In the meantime the Lehigh Valley  
Railroad Company makes alternative proposals  
to the Central of New Jersey, viz: to run its  
trains from a point east of Bound Brook to  
Jersey City over the tracks of the Central, or,  
if that is not agreeable, to extend its line from  
Bound Brook to Newark and thence over the  
tracks of the Newark and New York Railroad,  
or by a continuation of its own line over the  
bed of the Morris and Essex Canal to Jersey  
City, where its late President, Packer, was  
shrewd enough to secure a small but well lo-  
cated tract of water-front property.

The question to be settled is whether the  
Central of New Jersey can accommodate all  
these diverse interests and keep harmony  
among its stockholders; or whether one class  
of holders will have to buy out their disinter-  
ested associates. The Central of New Jersey  
has ample terminal grounds fronting on New  
York Bay—the best of any road entering New  
York—and only lacks western connections to  
make it part of another great trunk line.  
Should the Baltimore and Ohio people be  
crowded out of their intended use of the Cen-  
tral, they can, without any sacrifice, make alli-  
ance with the Lehigh Valley, and build a sep-  
arate line via Newark into New York.

On the other hand, should the Vanderbilt in-  
terest give way, it will admit the Baltimore and  
Ohio over the tracks of the Philadelphia and  
Reading, and so form a trunk line competition  
to this city as well as to Philadelphia and Balti-  
more.

Moreover, the Chesapeake and Ohio Railway

will thus be able to reach New York from the  
southwest, over one or the other of these two  
systems from its Washington terminus.

New Jersey has a general railroad law which  
requires a deposit with the State Treasurer of  
\$2,000 per mile on new road proposed to be con-  
structed. This, however, would be no great  
obstacle to a company like the Lehigh Valley;  
as the distance to be built is less than thirty  
miles. The real difficulty is in the expense of  
the right of way. But this is offset in part by  
the fact that it will have a lucrative business  
from Jersey City and Newark, and has very  
valuable terminal grounds at tide-water. Indi-  
cations point to an extension of the Lehigh  
Valley to New York, and the Philadelphia con-  
nection of the Reading can be made over the  
new line or the Central of New Jersey.

## MISDIRECTED WARFARE.

THE anti-monopolistic tendencies of legisla-  
tion in the present day serves to illustrate  
the evil that may arise from misdirected well-  
doing. Monopolies generally exist under the  
control of corporations, and for that reason the  
average legislator deems it his duty to strike  
not at the monopolistic features of a corpora-  
tion, but at the corporation itself. So strongly  
has this perversion seized the public mind,  
that corporate bodies have difficulty in obtain-  
ing the rights and privileges they might claim  
as private individuals. This system of legal  
physic which is now administered in heroic  
doses, reminds us of the treatment of a doctor  
who would cure a fever by killing the patient.

A corporation is nothing more or less than a  
combination given individuality. It can sue  
and be sued, and is as much responsible for  
evil created in its name as the most humble of  
persons. To facilitate its existence and in re-  
turn for the public benefit ensuing, a corpora-  
tion is also granted certain privileges and im-  
munities, but these are given in a purely selfish  
spirit; that the community granting them may  
reap its benefits more surely, not through any  
kind indulgence to aggregated wealth. Des-  
pite these self-evident facts, the anti-corpora-  
tion warfare is relentlessly pursued, and as is  
usual in such cases, in the name of justice  
much injustice is exercised.

It is considered laudable to cheat a corpora-  
tion, to harrass it with perplexing laws, to  
hinder its progress, and ruthlessly check any of  
its attempts to enrich its coffers and widen its  
influence. If in the course of a railroad's busi-  
ness, detentions arise from unforeseen causes,  
and public travel and traffic meet with a trifling  
delay, there is an outcry against the "insolence  
of greedy corporations," and a burst of in-  
dignation at the encroachment of monopolies.

A private individual may obstruct the sidewalks and streets with awnings and carriages at a wedding or reception at his residence, and no one complains, but let there be a freight car obstructing a street, or an express wagon barring a portion of the sidewalk, and the public are quick to demand the instant removal of these obstructions. The courtesies extended individuals are never allowed to corporations, though the public may daily experience a hundred benefits from the latter and none from the former.

The State of New Jersey has for years been the scene of an irrepressible conflict between the people and the railroads crossing its territory. A seeker for legislative honors in Jersey may now scarcely hope for election unless at the outset he avows himself as inimical to railroad interests. Yet how great a portion of New Jersey's prosperity is due to the operations of these railroad corporations. How many towns have sprung up and grown to cities of importance simply through the existence of these "greedy corporations"—what vast tracts of worthless marsh lands have been improved and converted into valuable property by these same corporations. Private fortunes have been realized through the benefits created by railroad, and yet the possessors of this wealth are generally among the first to oppose the corporations, and kick over the ladder upon which they climbed. It is claimed in New Jersey that the railroads are seeking to evade a just taxation of their property, and yet much of this property was worthless before it was improved by its present owners. No one would feel disposed to blame an individual if he sought to lessen the tax upon property, the sole value of which arose through his own improvements and exertions, yet this effort on the part of a corporation becomes arrogant presumption.

Far be it from us to uphold or extenuate injustice and oppression on the part of either individual or corporation. We simply ask that they be treated alike. The courts are always open to redress the wrongs of suffering humanity, and a corporation is responsible before the law for its own acts. Difficulties thrown in the path of incorporated bodies seeks to discourage the combination of individual wealth, without which national progress is impossible. Of all corporations railroads rank first in importance, and railroad legislation should encourage the formation and growth of railroads. If they overstep the limits of their rights and privileges, let them answer to the law for such violation, but it is absurdly unjust to pass harrassing laws for all because a single instance of abuse of power has been noted.

The Anti-Monopoly party may enjoy a long

and useful life if it confines its efforts to the remedy and prevention of abuses on the part of capital whether individual or incorporate, but it will shortly go to pieces if it continues a mad crusade against all corporations with no other *casus belli* than the fact of their general wealth and opportunities for oppression, and without regard to their usefulness or influence upon the prosperity of nation, state and city.

#### Parlor Cars for the Canadian Pacific Railway.

The following description of two new parlor cars recently constructed for the Canadian Pacific Railway is from the *Montreal Witness*:

Their exterior is of very highly polished mahogany with very elegant gilt ornamentations, the exceedingly broad windows enhancing greatly the rich appearance of the whole. They ride upon forty-inch Krupp wheels and are furnished with all the latest improvements as far as riding is concerned. It would be difficult in a cursory sketch to do justice to the elegance of the interior. At either end of each car is a spacious smoking apartment, capable of accommodating eight people, and very handsomely upholstered in dark colored leather. The lavatories are conveniently large and well appointed, while the main body of the car is a most luxurious parlor. The windows are very wide, giving a cheerful light to the car and affording the greatest facility for observation. They are also provided with the latest improvements in dust screens. The interior of the car is beautifully finished mahogany, with festoons of flowers in inlaid satin and rosewood. Between the windows and at the ends are very handsome plate glass mirrors with small rosewood borders. The roof is of oak with ornamentations. The chairs are exceedingly comfortable, upholstered in rich crimson velvet, contrasting well with the dark carpet on the floor. Altogether these cars, the "Lachine" and "Carillon," are certainly among the finest ever brought into Canada. They begin running to-day, one in the morning and the other in the evening.

#### Production of Pig-Iron in 1882.

The American Iron and Steel Association has received reports from all the makers of pig-iron in the United States, and officially announce that the quantity of pig-iron made in 1882 was 4,623,323 tons, which is almost half a million tons more than ever before made in one year in this country. The production of 1881 was 4,144,254 tons. The production of the different kinds of pig-iron in 1881 and 1882 was as follows in gross tons:

	1881.	1882.
Bituminous.....	2,025,236	2,176,855
Anthracite.....	1,548,627	1,823,338
Charcoal.....	570,391	623,130
Totals.....	4,144,254	4,623,323

The stock of pig-iron held unsold in the hands of makers at the close of 1882 was 383,655 tons. At the close of 1881 the stock on hand was 188,300 tons.

SUBSCRIBE for the Railroad Journal.

#### THE FUTURE GROWTH AND INFLUENCE OF AMERICA.

A MOMENTOUS and almost startling paper has been read by Mr. ROBERT GIFFEN—a gentleman of high scientific and commercial attainments—before the Statistical Society of London, of which he is President, the echoes of which are already finding lodgment among thinkers on the other side of the ocean. Inasmuch as it concerns largely the future of interchanges of products between America and Western Europe, and incidentally the political relations between the United States and European countries—not to speak of the international relations of the five great powers of Europe—we have thought it proper to reproduce some of its most salient features.

After discussing the ability of the five great powers to feed their own peoples, and the relation of Ireland and India to Great Britain in that respect, Mr. Giffen says, as to the population and power of production of North America (and this is what more particularly concerns the land holding, farming and transporting classes in our own country):

#### INCREASE IN NUMBERS.

The last broad fact I shall refer to as presented, and made familiar to us by these statistics of population, is that of the growth of population in the United States, a subject, perhaps, of even greater interest than any I have yet referred to, and involved as it is in fact with one or two interesting questions already glanced at, viz., the existence and increase of large European populations which are supported by imports of food from new countries, and mainly from the United States.

The broad fact presented by the United States is that of the doubling of the population in periods of about twenty-five years. There is a little doubt about the exact population at the time of the War of Independence, and down to the first census at the beginning of the present century, but for the present purpose the figures we get are good enough:

	In Mins.		In Mins.
1780.....	3.0	1840.....	17.1
1790.....	3.0	1850.....	23.2
1800.....	5.3	1860.....	31.4
1810.....	7.2	1870.....	38.5
1820.....	9.6	1880.....	50.1
1830.....	12.9		

In other words, the population of the United States has multiplied itself by sixteen in the course of the century—this being the result of its doubling itself every twenty-five years for that period. In another twenty-five years, at the same rate of increase, the population will be 100,000,000, in fifty years 200,000,000, in seventy-five years 400,000,000, and at the end of a century 800,000,000! Such is the first aspect of the broad fact presented to our consideration by the increase of population in the United States. The rate is such as to be fairly bewildering in its probable consequences. The phenomenon is also without a precedent in history. There has been no such increase of population anywhere on a similar scale, and



above all, no such increase of a highly civilized and richly fed population. The increase is not only unprecedented in mere numbers, but it is an increase of the most expensively living population that has ever been in the world. For the idea of such an increase we are indebted exclusively to statistics. The United States, among the other new ideas of old civilizations they have had the benefit of, have had the idea of a periodical census, which is even made a part of their Constitution, and as the result we have before us, not only in a general way, but with some precision, so that discussion may have an assured basis, this phenomenon of an unprecedented increase of population, which is, perhaps, the greatest political and economic fact of the age.

#### BALANCE OF POLITICAL AND FINANCIAL POWER.

The fact has altered, in the first place, the whole idea of the balance of power of the European nations. A century ago the European nations in their political relations thought little but of each other. Now the idea of a new Europe on the other side of the Atlantic affects every speculation, however much the new people keep themselves aloof from European politics. The horizon has been enlarged, as it were, and the mere fact of the United States dwarfs and, I think, restrains the rivalries at home—European Governments can no longer have the notion that they are playing the first part on the stage of the world's political history. And this sense of being dwarfed will probably increase in time. In this country, at any rate, we cannot but feel greatly attracted by the United States. Because of the magnitude of that country, the European continent is less to us—our relations are elsewhere.

It is in connection, however, with our own home problems of population that the increase of the United States is most interesting to us. The increase is partly at our expense, and at that of the other European nations. If the United States or some other new country had not received our emigrants, it is quite clear that our whole history would have been different from what it is. We should either have had in our midst the people who emigrated, and their descendants, straining the resources of our soil and mines and capital, or the pressure upon these resources would have checked in various ways the growth of the population itself, so that probably, at this moment, but for the new countries, more people would now be living in the United Kingdom than there are, and larger numbers of the population would be paupers, or on the verge of pauperism. The actual numbers we have lost altogether, and specially to the United States, have been:

	To United States.	Altogether.
Before 1820.....	50,000	123,000
1820-30.....	100,000	247,000
1830-40.....	308,000	703,000
1840-50.....	1,094,000	1,684,000
1851-52.....	511,000	704,000
1853-60.....	805,000	1,312,000
1860-70.....	1,132,000	1,571,000
1870-80.....	1,087,000	1,678,000
Total.....	5,087,000	8,022,000

Some correction of these figures would be necessary in the earlier years for foreigners included, and in the later years for persons returning home, but the correction in the present view would make no material difference. If these people had not emigrated, and had in-

creased as the rest of the population has done at home, the existing population in the United Kingdom would now be many millions more than it is. The difference made by the emigration to the United States alone must be a good many millions.

#### THE FOOD SENT OUT OF THE UNITED STATES.

The influence of the United States and other new countries has been greater still. On a rough calculation, about twelve millions at least of the people of the United Kingdom live on imported food, and a certain part of the population of Germany, France, Belgium, and Holland also live on imported food—the importations being mainly from the United States. These new countries, therefore, not only have permitted an increase of population in a century, till it is sixteen times the population at starting, but a much larger increase. To take the United States alone, we cannot estimate its contribution to the support of foreign populations at less than an amount equal to the support of a population of ten millions, similar in character to that of the United Kingdom. Its exports of breadstuffs and provisions are now about ninety million pounds annually, at the value as they leave the United States; and at £9 per head, corresponding approximately to a value in the United Kingdom of £11 per head, which is about our consumption of agricultural products per head, this would be equal to the support of ten million persons. In other words then, the United States, from supporting three millions of people a century ago, are now supporting at least sixty millions—virtually an increase of twenty times the original number. The growth of population thus becomes more astonishing than ever. Altogether there must be about fifteen millions of people in Europe supported by the produce of the new countries; and adding together the populations of Canada, Australia, and the United States to this fifteen millions, less a deduction for the population in these countries a century ago, there remains a total of about seventy millions of European population, or nearly one-fourth of the population now living in Europe, which is supported by the produce of newly opened regions. To make these figures quite exact, a correction ought to be made on account of the non-European element in the population of the United States, the colored population in 1880 being six and one-half millions. The colored population in the United States, however, is brought into competition with the European, and in some degree Europeanized. The history of Europe, we may well say, would have been entirely different from what it has been during the last century but for the new countries. It is difficult, indeed, to overestimate the extent to which the existence of a new field for population, such as the United States presents, has dominated the recent economic history of Europe. We are so accustomed to a set of economic circumstances in which population, constantly increasing in numbers and in the capacity for food consumption per head, finds practically unlimited means of expansion, that we can hardly understand economists like Malthus, who were oppressed by the only too evident limits which nature, at the time he wrote, had apparently set.

#### GROWING SCARCITY OF GOOD LANDS.

The bare statement of such figures appears to me quite enough to indicate that the present economic circumstances of the European family of nations, including the United States as an offshoot and part of the family, are not likely to continue for more than a generation or two. We are within measurable distance of very great changes. No doubt there are other new lands—in Australia, in Canada, at the Cape, and elsewhere—which will be more or less available in the future; but, singly, the United States is so much the larger field, that the influence of these other new lands need not be considered. Assuming the United States to possess only half the area of new country available for the European races, a single doubling of the population, after the United States has been filled up—the work of a generation or two—would absorb all these other new lands; their existence only postpones the date, when they will all be in the position calculated for America alone at the end of a century, by thirty years or so. In the course of a century then we may affirm that the present economic circumstances of the European races which make possible an indefinite expansion of the numbers of the people coupled with an increase of their consuming power, will have entirely changed.

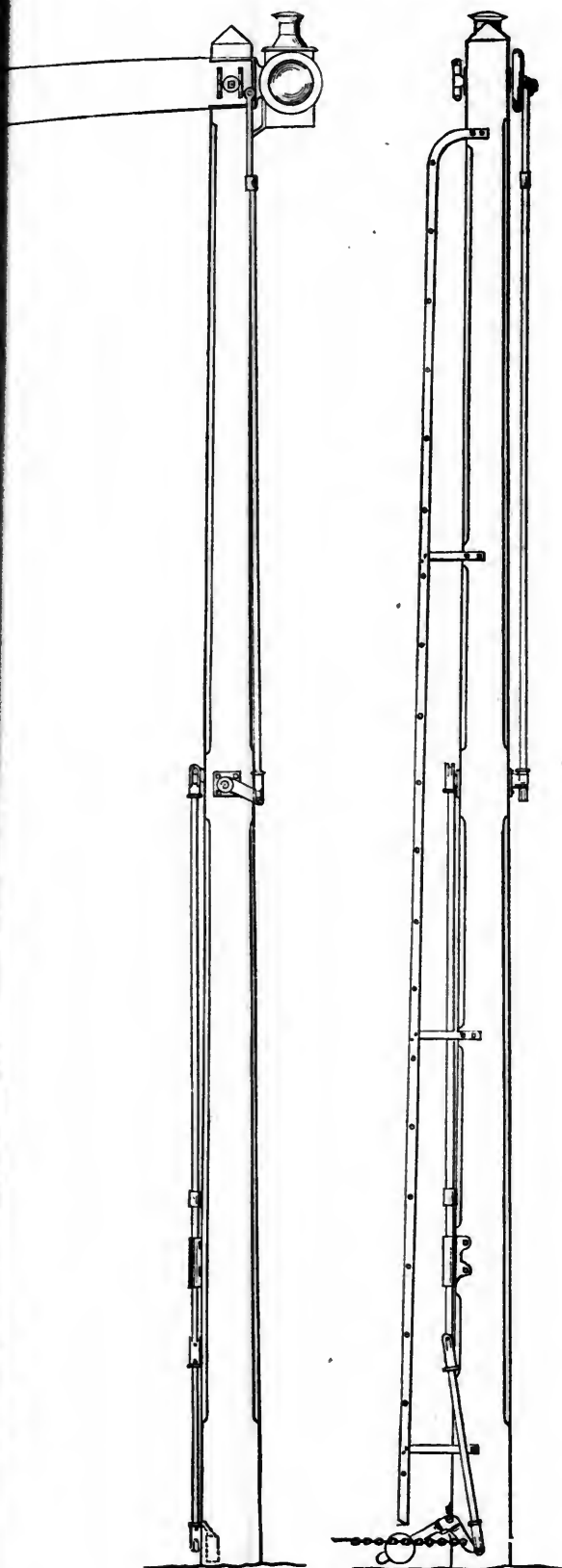
The facts appear to me so interesting that I ask leave to add something more, though the figures I have now to give you, while easily accessible, are not quite so much on the surface, and have not been popularized. These figures relate to the actual appropriation of land for settlement, and the actual growth of population in the new and old States respectively. What I wish to bring out is that a much larger portion of the available area of the United States has been "taken for settlement" than is commonly imagined; that, in fact, not only the thirteen original States and their three subsections have been so taken for settlement, but what are known as the Western States, exclusive of the Pacific Territories, have also been taken for settlement; that the growth of rural population in this second group of States has now brought them nearly to the level of the rural population in the older States; that there is no longer much room for growth by taking up new lands in all these portions of the States; that the remaining available area is so small as to render inevitable its being taken for settlement before very long; and that, from this point, probably within twenty or thirty years, the new economic circumstances I have been referring to must make themselves felt.

It is reported by telegraph that two of the companies that have applied for a charter from the Massachusetts Legislature to build a canal across Cape Cod are willing to place in such Trust Company as the Government may direct, a certain sum for a guarantee of good faith. One company will give a bonus of \$100,000, and the other \$200,000. Each will give more if called for. Their charters have been carefully read, and on the face the above guarantee is inserted.

I HAVE lived to know that the secret of happiness is never to allow your energies to stagnate.—Adam Clarke.

## Interlocking Switch and Signal Apparatus.

[Continued from page 126.]



SEMAPHORE SIGNAL AND POST.

SIGNALS.

The signals employed in this system may of course be of any description adapted to being operated by positive movements, but the great preference is for the Semaphore signal, which has been found so superior to all the other types that it is rapidly superseding all the other signals. As shown, the Semaphore signal, as applied to railway traffic, consists of a vertical post which has one or more movable arms pivoted to it at their upper ends, and these arms are capable of being moved through a

right angle. When the arm is raised to the horizontal position, as shown, it means "Stop," or "Danger"; and when the arm is hanging down at an angle of say thirty degrees, it denotes "All right." The Semaphore signal post often has, at stations or junctions, two or more arms one above another, but in all cases the arms on one side refer to trains proceeding in one direction.

At complicated junctions or stations the signals are sometimes arranged on a girder or platform spanning the tracks. The signals should always be elevated to a considerable height, so as to be seen from a distance over intervening objects.

The signals are termed respectively "Distant" and "Home" signals, according to their position. The "Distant" signals are usually placed far enough from the "Home" signals to allow a train approaching the signal cabin to be brought under control after the "Distant" signal is seen by the engine-driver, so that the train may be stopped at the home signals. The "Distant" signals will require to be 1,200 to 2,200 feet from the signal cabin, according to the conditions for observing the signal from the locomotives.

The "Distant" signal is mounted on a post thirty to forty feet high, as the situation may require. The Semaphore arm is about four feet long and one foot wide, made of wood with an iron head piece to which the moving rod is attached. The end of the head piece is a large ring or spectacle with red glass. At night a powerful lamp is placed behind the spectacle so that when the Semaphore is raised to the horizontal position the spectacle is before the lamp and shows a brilliant red light, and when the Semaphore arm is lowered the spectacle passes above the lamp and the light shows white. The lamp is provided with lenses which project the light in a powerful direct ray that can be seen a great distance. The Semaphore also carries on the side next the signal cabin, a small spectacle with blue glass, by which at night to indicate to the switchman in the signal cabin the position of the arm. To afford access to the lamp a strong iron ladder is secured to the post, as shown in the side elevation left out in front elevation to show other parts.

The "Home" signals are usually placed a few yards in the front of stations, junctions, switches, or other points at which obstruction may be expected, and should be understood as indicating the point to which trains may draw when the signal is at "Danger." Enginemen should not be called upon to exercise discretion in stopping at some distance before a signal. The home signal should just be placed at the position engines are required to stop.

In all cases signals should be counter-weighted, so that their tendency is to assume the position indicating danger; thus if the rod or wire by which they are worked should break, the signal at once flies to "Danger" and stops the traffic, and the worst that can happen is delay.

The arrangement on the post for moving the signal by the pull of the wire is very simple. The wire (or chain at the end of the wire) is attached to a weighted lever fixed at the foot of

the post, and connected with the arm so that the pulling of the wire will raise the rear end of the arm and depress the signal. In case the wire should break at any place, even close to the signal cabin, the weight at the signal post is sufficient to pull the wire towards the signal post, and let the Semaphore arm fly back to its normal position of "Danger." Thus, a breaking of the wire connection can cause only delay and cannot lead to an accident from a safety signal being improperly displayed.

In this system all the "Home" signals are worked by rod connections, making positive movements, the same as the switches and locks. The "Distant" signals are worked by wires, connected with the levers which are usually those at the ends of the lever frame. To work "Distant" signals placed at proper distances from the signal cabin by rod connections becomes well nigh impracticable from the weight of the rods or pipes to be moved, while with wire the "Distant" signals may be worked at great distances.

[TO BE CONTINUED.]

THE New York and New England Railway's direct connection with the South around New York City, which was temporarily broken by needed repairs to the steamer Maryland, will be renewed on the 18th inst., when the Maryland will resume her trips from Harlem River. It is proposed to shorten the time between Boston and Washington one hour and a half, and also to improve the service between Washington and Boston. The January traffic over the New York and New England at Newburg, its Hudson River terminus, is rapidly increasing. In January there were transferred across the river eastward 3,025 loaded and 28 empty freight cars, including 1,674 loaded with coal. The movement west comprised 724 loaded and 3,006 empty cars.

THE Illinois Central Railroad Company announces the completion of arrangements for the sale of through tickets from Chicago to San Francisco. The route will be over its line to New Orleans, and thence to San Francisco over the Southern Pacific. The rates will be the same as by other lines. The route is 500 miles longer than by the Central and Union Pacific, but the managers believe that the greater comfort of winter travel by the Southern route will induce many to go that way.

It is rumored that the Wissahickon, Roxborough and Barren Hill Passenger Railway, now operated as a horse-car line between Wissahickon station, through Roxborough to Barren Hill, will likely fall into the hands of the Philadelphia and Reading Railroad Company. Its franchises admit of the use of steam, and are valuable on that account.

THOMAS DREIN & SON of Wilmington, Del., have been awarded contracts to build ten twenty-four feet metallic life-boats and six sea-going life-rafts for Cramp & Sons of Philadelphia and two eighteen feet metallic life-boats for the steamer Pensacola, which is now at the works of the Harlan & Hollingsworth Company.

THE automatic signal system has been placed on the Philadelphia, Wilmington and Baltimore Railroad between Lamokin and Eddystone stations.



## THE STOCK EXCHANGES AND MONEY MARKET

## New York Stock Exchange.

Closing Prices for the week ending Feb. 13.

	W. 7.	Th. 8.	F. 9.	Sat. 10.	M. 12.	Tu. 13.
Adams Express.....	135	135	135	135	135	135
Albany and Susq. 1st mortgage.....	131	131	131	131	131	131
2d mortgage.....	131	131	131	131	131	131
American Express.....	92	91	90 3/4	91 1/2	91 1/2	91 1/2
Burl. C. R. & Nor. 1st mortgage.....	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2
2d mortgage.....	100 3/4	100 3/4	100 3/4	100 3/4	100 3/4	100 3/4
Canada Southern 1st mortgage guar.....	67 3/4	67 3/4	68	68	67	67 1/2
2d mortgage.....	94 3/4	94 3/4	94 3/4	95	95	95
Canadian Pacific.....	72	72 1/2	73 1/2	73 1/2	72 1/2	72 1/2
Central of N. Jersey 1st mort. 1890.....	72	72 1/2	73 1/2	73 1/2	72 1/2	72 1/2
7s, consol. ass. ....	110	110	110	110	110	110
7s, convertible ass. ....	110	110	110	110	110	110
7s, Income.....	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2
Adjustment.....	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2
Central Pacific.....	80 3/4	80 3/4	81 1/2	81 3/4	81 1/2	80 3/4
6s, gold.....	113 3/4	113 3/4	113 3/4	113 3/4	113 3/4	113 3/4
1st M. (San Joa.) 1st M. (Cal. & Or.).....	103 3/4	103 3/4	103 3/4	103 3/4	103 3/4	103 3/4
Land grant 6s.....	103 3/4	103 3/4	103 3/4	103 3/4	103 3/4	103 3/4
Chesapeake & Ohio 1st pref.....	22	20 3/4	21 1/2	22 1/2	23	23 3/4
2d pref.....	30	23 3/4	23	25 1/2	24 3/4	24 3/4
1st mort., series B.....	90 1/2	90 1/2	91 1/2	91	90 1/2	90 1/2
Chicago and Alton 1st mortgage.....	135	135 1/2	135 1/2	135 1/2	135 1/2	135 1/2
Preferred.....	140	140	140	140	140	140
Sinking Fund.....	140	140	140	140	140	140
Chi., Bur. & Quincy 7s, Consol. 1903.....	119 1/2	118 3/4	119	119 1/2	118	119
Chi., Mil. & St. Paul 1st mortgage, 8s.....	101 1/2	102	102 1/2	102 1/2	100 3/4	100 3/4
2d mort., 7 3/4-10s.....	117	117 1/2	118 1/2	118 1/2	118	118
7s, gold.....	118	118	118	118	118	118
1st M. (La. C. div.) 1st M. (I. & D. ext.).....	118	118	118	118	118	118
1st M. (H. & D. div.) 1st M. (C. & M. div.).....	118	118	118	118	118	118
Consolidated S. F. 120.....	120	120	120	120	120	120
Chi. & Northwestern 1st mortgage.....	130 3/4	131 1/2	131 1/2	131 1/2	130 3/4	130
2d mortgage.....	145 1/2	145 1/2	145 1/2	145 1/2	144 1/2	144 1/2
Sinking Fund 6s.....	110	110	110	110	110	110
Consolidated 7s.....	131	131 1/2	131 1/2	131 1/2	131	131
Consol. Gold b'ds Do. reg.....	125	125 1/2	124	124 3/4	124 1/2	124 1/2
Chi., R. Isl. & Pac. 6s, 1917, c.....	122 3/4	123 3/4	123 3/4	123 3/4	123	122 3/4
Clev., Col., Cin. & Ind. 7s.....	77 3/4	77 3/4	77 3/4	77 3/4	77 3/4	77 3/4
Clev. & Pittsburg gr. 7s, Consolidated.....	117	117	117	117	117	117
4th mortgage.....	117	117	117	117	117	117
Col., Chi., & Ind. Cent 1st mortgage.....	4	4 1/4	5	5	5 1/2	5 1/2
2d mortgage.....	117	117	117	117	117	117
Del. & Hud. Canal 1st mortgage.....	107 1/2	108	108 1/2	108 1/2	108 3/4	106 3/4
Reg. 7s, 1891.....	108	108	108	108	108	108
Reg. 7s, 1884.....	108	108	108	108	108	108
7s, 1894.....	115 1/2	115 1/2	115 1/2	115 1/2	115 1/2	115 1/2
Del., Lack. & Western 1st mortgage.....	121 1/2	121 1/2	121 1/2	122	120 3/4	119 3/4
2d mortgage.....	121 1/2	121 1/2	121 1/2	122	120 3/4	119 3/4
Consol. 1907.....	121 1/2	121 1/2	121 1/2	122	120 3/4	119 3/4
Erie Railway 1st mortgage.....	117	117	117	117	117	117
2d mort. 5s, ext.....	117	117	117	117	117	117
3d mort. 5s, ext.....	117	117	117	117	117	117
4th mort. 5s, ext.....	117	117	117	117	117	117
5th mortgage.....	117	117	117	117	117	117
7s, Consol. gold.....	130	129	129	129	129 1/2	129 1/2
Great West. 1st mort 2d mortgage.....	130	130	130	130	130	130
Hannibal & St. Jo. 1st mortgage.....	40	82 1/2	83	83 1/2	85	84 1/2
Preferred.....	82 1/2	83	83 1/2	85	84 1/2	84 1/2
8s, Convertible.....	108	108	108	108	108	108
Houston & Tex. Cen 1st mortgage.....	120	120	120	120	107 1/2	107 1/2
2d mortgage.....	120	120	120	120	107 1/2	107 1/2
Illinois Central.....	145 1/2	145 1/2	146 1/2	146 1/2	143 1/2	144 1/2
Lake Shore & Mich So 1st mortgage.....	110 1/2	110 1/2	110 1/2	110 1/2	109	108 3/4
Consol. 7s.....	110 1/2	110 1/2	110 1/2	110 1/2	109	108 3/4
Consol. 7s, reg.....	110 1/2	110 1/2	110 1/2	110 1/2	109	108 3/4
2d Consolidated.....	110 1/2	110 1/2	110 1/2	110 1/2	109	108 3/4
Lsh. & W. B. con. ass 1st mortgage.....	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2
Long Dock bonds.....	117	117	117	117	117	117
Louisville & Nash. 7s, Consol. reg.....	55 1/2	55 1/2	56	56	54 1/2	54 1/2
Manhattan 1st pref.....	46 1/2	53 1/2	53 1/2	53 1/2	53 1/2	53 1/2
Met. Elevated 1st mortgage.....	85	84 1/2	84 1/2	84 1/2	84 1/2	84 1/2
Michigan Central 7s, 1902.....	95	96 1/2	95 1/2	96	95	94 1/2
Morris & Essex 1st mortgage.....	121 1/2	121 1/2	121 1/2	121 1/2	122 1/2	122 1/2

2d mortgage.....	122	122	122	122	122	122
7s of 1871.....	122	122	122	122	122	122
7s, Convertible.....	122	122	122	122	122	122
7s, Consolidated.....	122	122	122	122	122	122
N. Y. Cen. & Hud. R. 1st mortgage.....	125 1/2	127 1/2	126 1/2	126 1/2	125 1/2	125 1/2
6s, S. F., 1883.....	101 1/2	101 1/2	101 1/2	101 1/2	101 1/2	101 1/2
6s, S. F., 1887.....	107 1/2	107 1/2	107 1/2	107 1/2	107 1/2	107 1/2
1st mortgage.....	130	130	130	130	130	130
1st mortgage, reg.....	130	130	130	130	130	130
N. Y. Elevated 1st mortgage.....	116	116	115 1/2	115 1/2	115 1/2	115 1/2
N. Y. & Harlem 1st mortgage.....	116	116	115 1/2	115 1/2	115 1/2	115 1/2
Preferred.....	116	116	115 1/2	115 1/2	115 1/2	115 1/2
1st mortgage.....	116	116	115 1/2	115 1/2	115 1/2	115 1/2
1st mortgage, reg.....	116	116	115 1/2	115 1/2	115 1/2	115 1/2
N. Y. Lake Erie & W 1st mortgage.....	37 1/2	37 1/2	37 1/2	37 1/2	36 1/2	36 1/2
Preferred.....	79 1/2	79 1/2	79 1/2	79 1/2	78 1/2	78 1/2
2d Consolidated.....	96 1/2	96 1/2	96 1/2	96 1/2	95 1/2	95 1/2
New 2d 5s fund.....	95	95	95	95	93 1/2	93 1/2
N. Y., N. Hav. & Hart 1st mortgage.....	172	172	172	172	172	172
North Mo. 1st mort 1st mortgage.....	47 1/2	48 1/2	48 1/2	48 1/2	47 1/2	47 1/2
Preferred.....	83 1/2	83 1/2	83 1/2	83 1/2	82 1/2	82 1/2
Ohio & Mississippi 1st mortgage.....	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2
Preferred.....	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2
2d mortgage.....	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2
Consolidated 7s.....	116	116	116	116	116	116
Consol. S. Fund.....	116 1/2	116 1/2	116 1/2	116 1/2	116 1/2	116 1/2
Pacific Mail S. S. Co 1st mortgage.....	41 1/2	41 1/2	41 1/2	42 1/2	41 1/2	42 1/2
Pacific R. R. of Mo. 1st mortgage.....	41 1/2	41 1/2	41 1/2	42 1/2	41 1/2	42 1/2
2d mortgage.....	41 1/2	41 1/2	41 1/2	42 1/2	41 1/2	42 1/2
Panama 1st mortgage.....	53 1/2	53 1/2	53 1/2	54 1/2	54 1/2	54
Phila. & Reading.....	53 1/2	53 1/2	53 1/2	54 1/2	54 1/2	54
Pitts., Ft. W. & Chi. gtd 1st mortgage.....	136 1/2	136 1/2	136 1/2	136 1/2	135	135
2d mortgage.....	136 1/2	136 1/2	136 1/2	136 1/2	135	135
3d mortgage.....	136 1/2	136 1/2	136 1/2	136 1/2	135	135
Pullman Palace Car 1st mortgage.....	120	121	121 1/2	122	122	122
Quickkill Min'g Co 1st mortgage.....	120	121	121 1/2	122	122	122
Preferred.....	120	121	121 1/2	122	122	122
St. Louis & San Fran 1st mortgage.....	30 1/2	30 1/2	32	31 1/2	30 1/2	30 1/2
Preferred.....	50	50 1/2	50 1/2	51 1/2	50	50 1/2
1st mortgage.....	50	50 1/2	50 1/2	51 1/2	50	50 1/2
St. L., Alt'n & T. H. 1st mortgage.....	64	65	66	68	66 1/2	65
Preferred.....	64	65	66	68	66 1/2	65
1st mortgage.....	64	65	66	68	66 1/2	65
2d mort. pref.....	64	65	66	68	66 1/2	65
Income bonds.....	64	65	66	68	66 1/2	65
St. L., Iron Mt. & S. 1st mortgage.....	113 1/2	113 1/2	113 1/2	113 1/2	113 1/2	113 1/2
2d mortgage.....	113 1/2	113 1/2	113 1/2	113 1/2	113 1/2	113 1/2
Toledo and Wabash 1st mortgage.....	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2
2d mortgage.....	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2
7s, Consolidated.....	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2	106 1/2
St. Louis Division 1st mortgage.....	92 1/2	94 1/2	94 1/2	95 1/2	93 1/2	93
1st mortgage.....	113 1/2	113 1/2	114	114	113 1/2	114
Land Grant 7s.....	110	110	110	110	110	110
Sinking Fund 8s.....	119	119	119	119	119	119
United States Ex. 1st mortgage.....	63	63	63	63	62	62
Wabash, St. L. & Pac 1st mortgage.....	31 1/2	31 1/2	31 1/2	32 1/2	31 1/2	31 1/2
Preferred.....	51 1/2	51 1/2	52	52 1/2	51 1/2	51 1/2
New mort. 7s.....	51 1/2	51 1/2	52	52 1/2	51 1/2	51 1/2
Wells-Fargo Ex 1st mortgage.....	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2
Western Pacific b'ds 1st mortgage.....	81 1/2	82 1/2	83 1/2	83 1/2	82 1/2	81 1/2
Western Union Tel. 7s, S. F. conv., 1900.....	117 1/2	117 1/2	117 1/2	117 1/2	117 1/2	117 1/2

## Boston Stock Exchange.

Closing Prices for the Week Ending Feb. 13.

	W 7.	Th. 8.	F. 9.	Sat. 10.	M. 12.	Tu. 13.
Atch., Top. & San. Fe.	80¾	80¾	81¼	82¼	81¾	81
1st mortgage.....	121	121	121	121¼	121	121
Land Grant 7s.....				113¾		
Boston & Albany...	176	175 ½	175	175 ½	176	176
Boston and Lowell.....	100	98 ½	97 ½	97 ½	97	97
Boston & Maine....	155 ½	155 ½	155 ½	155 ½	155 ½	155 ½
Boston & Providence	160 ½					
Bos'n, Hart. & Erie 7s						
Burl. & Mo. R. L. G. 7s						
Burl. & Mo. R. in Neb						
6s, exempt.....		113 ½	113	113		
4s.....			80 ½			91
Chi., Burl. & Quincy	119	118 ½	118 ½	119 ½	118	118 ½
Cin., Sand & Cleve (\$50)	22					
Concord (\$50).....	101	101 ½	101 ½	101 ½		
Connecticut River.						
Eastern	46 ½	47			45 ½	46
New 6s, Bond.....		110 ½	109 ½			

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Feb. 12.

Tu. 6. W. 7. Th. 8. F. 9. Sat. 10. M. 12.

Baltimore & Ohio...	107	109	107	109
6s, 1885.....	107	109	107	109
Central Ohio (\$50)...	70	75	70	75
1st mortgage.....	112	114	111	113
Marietta & Cin. 7s.....	88	92	88	92
1st mortgage, 7s.....	131 1/2	131 1/2	132 1/2	132 1/2
2d mortgage, 7s.....	101 1/2	101 1/2	102 1/2	103
3d mortgage, 8s.....	54 1/2	54 1/2	54 1/2	55
Northern Cen. (\$50).....	55	55	55 1/2	55 1/2
2d mort. 6s, 1885.....	103 1/2	103 1/2	104 1/2	104 1/2
3d mort. 6s, 1900.....	114 1/2	114 1/2	114 1/2	114 1/2
6s, 1900, gold.....	113 1/2	113 1/2	114	114
6s, 1904, gold.....	121	122	122	122
Pitts. & Connellsv. 7s.....	51 1/2	51 1/2	51 1/2	50
Virginia 6s Consol.....	45	49	48 1/2	50
Consol. coupons.....	40	40	40	40
10-40 bonds.....	48	48	48	48
Def'd Certificates.....	48	48	48	48
New 3s.....	48	48	48	48
Western Maryland.....	112	112	112	112
1st M., end. by Balt.....	112	112	112	112
2d M., do.....	112	112	112	112
3d M., do.....	112	112	112	112
1st M., unendorsed.....	112	112	112	112
2d M., end. Wash Co.....	112	112	112	112
2d M., preferred.....	112	112	112	112
City Passenger R. R.....	112	112	112	112

**London Stock Exchange.**

Closing Prices

	Jan. 25.	Jan. 19.
Baltimore and Ohio 5s, 1927.....	107	109
Central of N. J., \$100 shares.....	70	75
Do. consol. mort.....	112	114
Do. Income Bonds.....	88	92
Central Pacific of Cal., \$100 shs.....	86	87
Do. 1st mort. 6s, 1895-'98.....	116	119
Det., G'd Haven & Mil. Equip bds.....	118	120
Do. Con. M. sp. c., till '83 after 6p. c.....	117	119
Illinois Central \$100 shares.....	149 1/2	150 1/2
Do. S. F. 5s, 1903.....	105	107
Lehigh Valley Cons. mort. 1923.....	115	120
Louisville and Nashville mort. 6s 94	96	94
Do. capital stock \$100 shares.....	57	58 1/2
N. Y. Cen. & Hud. R. mort. bonds.....	130	135
Do. \$100 shares.....	131	132
Do. mort. bonds (stg.).....	119	121
N. Y. Lake Erie & West. \$100 shs.....	40 1/2	41 1/2
Do. 6 p. c. pref. \$100 shares.....	84	86
Do. 1st Con. Mort. bonds (Erie).....	130	132
Do. do. Funded Coupon bonds.....	125	130
Do. 2d Consol. Mort. bonds.....	99	101
Do. do. Funded Coupon bonds.....	97	99
N. Y., Pa. & Ohio 1st mort. bonds.....	57 1/2	58 1/2
Do. Prior Lien bonds (sterling).....	103	106
Pennsylvania \$50 shares.....	62 1/2	63
General Mortgage.....	121	123
Phil. & Erie Gen. mort. 6s, 1920.....	114	116
Philadelphia & Reading \$50 shs.....	28 1/2	29
General Consol Mortgage.....	115	117
Do. Improvement Mortgage.....	104	106
Do. Gen. Mtg. '74, ex-def'd coup.....	95	97
St. L. Bridge 1st mort. gold bond.....	122	124
Do. 1st pref. stock.....	92	96
S. P'fic of Cal., 1st mort 6s, 1905-6.....	103	107
Union Pacific 1st mtg. 6s, 1896-9.....	116	118
Wabash, St. L. & P. \$100 shares.....	34	36
Do. \$100 pref shares.....	56	57 1/2
Do. gen. mort. bonds.....	82	84

**AMERICAN RAILROAD JOURNAL.****Financial and Commercial Review.**

WEDNESDAY EVENING, FEBRUARY 14, 1883.

CALL loans on stock collaterals during the forenoon were 3 1/2 per cent, and on Government bonds 2 to 3 per cent. After 2 o'clock the rate for money on call on stocks was 3 per cent.

The posted rates for foreign exchange were 4.83 1/2 and 4.87. The actual rates were as follows: Sixty days, 4.82 1/2 @ 4.83; demand, 4.85 1/2 @ 4.86 1/2; cables, 4.86 1/2 @ 4.86 1/2. Commercial bills were 4.81 1/2 @ 4.82. Continental bills were as follows, viz: Francs, 5.21 1/2 @ 5.21 1/2, and 5.18 1/2 @ 5.18 1/2; reichsmarks, 94 1/2 @ 94 1/2 and 95 1/2 @ 95 1/2; guilders, 39 1/2 and 40 1/2.

The gross earnings of the Philadelphia and Erie Railroad for the year 1882 were \$4,011,413, the operating expenses \$2,599,534, and the net earnings \$1,411,879, which together with receipts from rents, makes a total revenue of \$1,415,465, against \$1,029,083 for 1881, showing an

increase of \$386,382. After deducting fixed charges, drawbacks and taxes, the surplus of earnings for the year was \$97,699. The extraordinary operating expenses of 1881 were \$135,278, and in 1882 there were none, so that the total income for 1882 shows an increase of \$521,660 over 1881. The cost of operating the road in 1882 was 64.80 per cent, a decrease of 5.10 per cent compared with 1881. The increase in passenger traffic during the year was 35 per cent and in freight 302,297 tons.

In the suit brought in the Supreme Court to restrain the Rome, Watertown and Ogdensburg Railroad Company from paying a dividend of three per cent upon its income bonds, Judge Donahue rendered a decision on the 12th inst. denying the motion to continue the preliminary injunction. These bonds, which were issued in extinguishment of certain liabilities of the company, were to draw interest from July 1, 1882, the interest to be computed from the end of each fiscal year and to be payable January 1 thereafter. The directors declared a dividend in December last, payable on January 20, 1883. The injunction was asked upon the ground that the dividend had not been earned in the fiscal year that closed last October, and that such interest should not be paid out of the earnings of the current fiscal year. The motion to continue the injunction was denied because the directors disproved the plaintiff's statement.

At an adjourned meeting in Philadelphia on the 8th inst. of the stockholders of the Buffalo, Pittsburgh and Western Railroad Company a resolution was adopted approving the consolidation of the Buffalo, Pittsburgh and Western, the Oil City and Chicago and Olean and Salamanca roads with the Buffalo, New York and Philadelphia Company. The agreement had already been favorably acted upon by the other companies in interest, as noted in our last issue, but the Buffalo, Pittsburgh and Western people were compelled to await the arrival of the proxies of the Dutch shareholders. The joint road will be known as the Buffalo, New York and Philadelphia Railroad Company. The company will have general offices in Philadelphia and New York, and Mr. J. W. Jones, formerly president of the Buffalo, Pittsburgh and Western, will be its president.

According to the statement of the Chief of the Bureau of Statistics at Washington the excess of exports of merchandise for the month of December, 1882, was \$33,458,613, against \$19,724,040 for the month of December, 1881; for the six months ending December 31, 1882, \$54,572,222, against \$65,339,712 for the same time in 1881; and for the twelve months ending December 31, 1882, \$15,135,192 against \$163,339,679 in 1881. The excess of imports or of exports of gold and silver coin and bullion was as follows: December, 1882 (excess of imports), \$1,280,368; December, 1881 (excess of imports), \$2,116,282; six months ended December 31, 1882 (excess of exports), \$75,338; last year, 1881 (excess of imports), \$26,516,794; twelve months ended December 31, 1882 (excess of exports), \$33,537,221; last year, 1881 (excess of imports), \$49,327,448; values of imports of merchandise during the twelve months ended December 31, 1882, \$752,841,145, and for the same time in 1881, \$670,209,448; value of

exports of domestic and foreign merchandise during the twelve months ended December 31, 1882, \$767,976,337, and for the twelve months ended December 31, 1881, \$833,549,127.

The report of the master under the receivership of the Philadelphia and Reading Railroad and Coal and Iron Companies, filed in the Clerk's office of the U. S. District Court, Philadelphia, on the 8th inst., shows that the balance on hand in the treasury of the railroad company December 1, 1882, was \$618,689; the receipts during the month of December were \$4,210,423, and the balance on hand December 30 was \$431,819. The balance on hand on account of deferred income bonds January 2, 1883, was \$13,524, there having been transferred to the Board of Managers of the railroad company during the month of December cash amounting to \$372. The balance in the treasury of the Coal and Iron Company January 1 was \$5,685. The receipts during the month of December were \$1,310,281 and the balance at the beginning of that month was \$90,959.

There was recorded in the Circuit Clerk's office of Alexander County, Ill., on the 31st ult., a mortgage to secure bonds to the amount of \$2,500,000. The mortgage was dated July 1, 1882, and was given by the Toledo, Texas and Rio Grande Railroad Company, to J. W. Paramore and John C. Black, trustees, to secure bonds issued by them for the construction of the road. Much of this road is already completed, and the rest of it will be pushed through with all the energy possible. It will embrace the Toledo, Cincinnati and St. Louis, the St. Louis and Cairo, and the Texas and St. Louis Narrow Gauge railroads. The Toledo and Cincinnati Railroad will cross the Illinois Central Railroad at Carbondale, and connect with the St. Louis and Cairo at Murphysboro, and the Texas and St. Louis at Cairo. This road will connect also with the Colorado Narrow Gauge Railroad, which extends far into Mexico.

The directors of the North Carolina Railroad Company have declared a dividend of six per cent—of which three per cent is payable March 1, and three per cent September 1.

The Governor of Rhode Island reports that the outstanding bonded indebtedness of that State is \$1,606,500, with a sinking fund of \$222,685.48, and an income during the latest calendar year of \$888,419.34.

The Chancellor of New Jersey has rendered a decision making perpetual the injunction previously obtained restraining the stockholders of the Camden and Atlantic Railroad from postponing their annual election from Feb. 22 to a later date.

The gross earnings of the Pennsylvania Railroad Company for the year 1882, on the lines between New York and Pittsburgh and the lakes, amounted to \$49,079,826 against \$44,124,182 in 1881, and \$41,260,072 in 1880. The monthly average of earnings for 1882 was \$4,089,985, or over \$140,000 per day, the largest for any period in the history of the road. Operating expenses were \$36,647,397 in 1882, \$26,709,809 in 1881 and \$24,625,047 in 1880.

The Chicago Tribune says that the Cincinnati, Indianapolis, St. Louis and Chicago and the Chesapeake and Ohio have opened an office in that city and announce that they are now pre-



pared to receive and bill freight via the Chesapeake and Ohio to Newport News and Europe, and that the rates to Newport News will be the same as to New York. The new route is but little longer than via the New York trunk lines, and in many respects has the advantage over the latter. It runs through a country that is almost entirely free from snow during the winter months, and will, therefore, be able to carry on its business when the other routes are blocked. Besides, it will not find it necessary to charge heavy lightage and terminal charges, the road running right to the steamers, which are owned and controlled by this company, which will be a saving to shippers of about three cents per bushel, even if it does maintain the same rates to Newport News as the trunk lines charge to New York. The Chesapeake and Ohio has now in the course of construction in England several first-class steamers, which will do its ocean business, and for their accommodation expensive and commodious docks have been built at Newport News.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atchison, Colorado and Pacific, 90; Atlantic and Pacific 1st, 94; Boston and New York Air Line pref., 8½; Col., Chi. and Ind. Cent., reorganization certif., 61; Clev., Col., Cin. and Ind. consol., 122½; Columbus, Hocking Valley and Toledo 1st, 84½; Chicago, St. Paul, Minn. and Omaha, 46; do. pref., 103; do. consol., 106½; Chesapeake and Ohio, cur. 6s, 52½; do. 1st, Series A, 107½; do. 6s, 1911, 101; Central Iowa 1st, 108; Chicago, Burlington and Quincy, Denver div. 4s, 82½; Chicago, Milwaukee and St. Paul, 2d mort., 103½; do. La C. and Dav. div. 1st, 94½; do. Southern div., 108; do. Chicago and Pacific Western div. 1st, 92½; do. Southern Minn. div. 1st, 106½; Chicago, St. Louis and New Orleans 5s, 104½; Cleveland and Toledo, S. F., 105½; Chicago and Northwestern, S. F. 5s, 101½; Chicago and Milwaukee 1st, 119; Denver and Rio Grande, 43½; do. 1st, 108; do. 1st consol., 88½; Delaware and Hudson 1st, Penn. div., 126½; Denver, South Park and Pacific 1st, 99; East Tenn., Va. and Ga., 9; do. pref., 16; do. inc., 36½; do. 1st, 116; do. 5s, 72; Fort Worth and Denver, 31½; Green Bay, Winona and St. Paul, 5; do. 1st, 77; do. 2d inc., 12½; Gulf, Colorado and Santa Fe 1st, 111½; Iowa Midland 8s, 129; International and Gt. Northern 1st, 105½; do. coup. 6s, 85; Indiana, Bloomington and Western, 29½; do. Eastern div. 6s, 92½; Joliet and Chicago, 138; Jefferson R. R. 1st, 105; Kansas Pacific 1st consol., 98½; do. 6s, 1836, 108½; do. 6s, Denver div. ass., 107½; Keokuk and Des Moines 1st, 103; Long Island, 62; do. consol. 5s, 98; Lake Erie and Western, 28½; do. 1st, 99; Louisville, New Albany and Chicago, 62; do. 1st, 103; Louisville and Nashville gen'l mort. 6s, 92½; do. Nashville and Decatur 1st, 116; Marietta and Cincinnati 1st pref., 11; Michigan Southern S. F., 106½; Minneapolis and St. Louis, 26; do. pref., 60½; do. S.W. Ext. 1st, 110½; Missouri, Kansas and Texas, 30½; do. consol. 7s, 105½; do. 2d, 56; do. gen'l mort. 6s, 30; Missouri Pacific, 102½; do. 3d, 110; Memphis and Charleston, 41½; Manhattan Beach, 17; Mobile and Ohio, 18; do. 1st mort., 107½; do. 2d debent., 51; Milwaukee, Lake Shore and Western pref., 45½; do. 1st, 98½; do. inc., 76; Milwaukee and Northern 1st, 93; New York, Chicago and St. Louis, 11; do. pref., 24½; do. 1st, 96½; Nashville, Chattanooga and Louisville, 59½; do. 1st, 96½; Northern Pacific, 47½; do. 1st, 103½; New Orleans Pacific 1st, 88½; New York, Ontario and Western, 25½; do. pref., 82½; Norfolk and Western pref., 39½; do. gen'l mort., 101½; Ohio Southern 1st, 82½; Ohio and Mississippi, Springfield div. 1st, 117; Ohio Central, 11½; do. inc., 28; do. 1st, 92; Oregon Transcontinental, 84; do. 1st, 93½; Oregon Railway and Nav., 135; do. 1st, 107; Oregon Short Line 6s, 94½; Peoria, Decatur and Evansville, 22½; do. 1st, 100; Penn. Co. 4½s, 95; Rochester and Pittsburgh, 19½; do. 1st, 104; do. inc., 44½; Richmond and Alleghany, 12; do. 1st, 79½; Richmond and Danville, 55½; do. 6s, 93½; do. debent., 61½; Richmond, Danville and West Point, 25; Rensselaer and Saratoga, 142; Rome, Watertown and Ogdensburg 5s, ext.,

73; St. Louis and San Francisco 2d, class A, 97; St. Paul, Minn. and Man., 140; do. 1st, 109; do. Dakota Ext. 1st, 108½; St. Paul and Duluth, 39½; do. pref., 93; St. Louis and Iron Mt. 1st pref. inc., 118; do. 5s, 77; South Carolina inc., 45; do. 1st, 102½; do. 2d, 92; Southern Pacific of Cal. 1st, 104; South Pacific of Mo. 1st, 103½; St. Louis, Alton and Terre Haute div. bonds, 75; St. Paul and Sioux City 1st, 112½; St. Louis, Kansas City and Northern, Omaha div. 1st, 109; do. R.E. 7s, 109; Texas Central 1st, 105½; Texas and Pacific, 39½; do. inc. L. G., 58½; do. Rio Grande div. 1st, 81½; Utah Southern Ext. 1st, 101½; Union Pacific col. trust, 102; Wabash, St. Louis and Pacific, gen'l mort. 6s, 78½; do. Cairo div. 1st, 81; do. Toledo, Peoria and Western 1st, 107; do. Chicago div. 1st, 81½; Arkansas 7s, M. & L. R., 51; do. M., O. & R. R., 45; do. P. B. & N. O., 50; do. Central R. R., 20; Alabama, Class A, 82½; do. B, 102½; Louisiana consol., 73; Missouri 6s, 1887, 107½; do. 1888, 109½; Tennessee 6s, old, 43½; do. compromise bonds, 46; American Cable, 69; Gold and Stock Tel., 96½; Mutual Union Tel., 22½; do. 6s, 88; Colorado Coal and Iron, 33; do. 6s, 80½; New Central coal, 14; Homestake Mining, 17; Ontario Mining, 20.

**Boston.**—Atchison, Colorado and Pacific 6s, 90; Atlantic and Pacific 6s, 93; Atchison, Topeka and Santa Fe mort. 4s, 81; do. 1st guar., 111; Burlington and Missouri River in Nebraska 6s, non-exempt., 103½; Boston, Revere Beach and Lynn, 115½; Chicago, Burlington and Quincy 7s, 127; do. 4s, 85½; do. 4s, Denver ext. 82½; Connotton Valley, 3½; do. 6s, 33½; do. 5s, 31; Cedar Rapids and Missouri River, 104; Chicago, Milwaukee and St. Paul, Dubuque div. 6s, 102½; Cincinnati, Sandusky and Cleveland 7s, 104; Cheshire pref., 6c; Flint and Pere Marquette, 26; do. pref., 99; Iowa Falls and Sioux City, 88; Kansas City, Lawrence and Southern 5s, 104½; Kansas City, St. Joseph and Council Bluffs, 7s, 114; Kansas City, Ft. Scott and Gulf, 80; do. pref., 120; do. 7s, 112; Little Rock and Ft. Smith, 7s, 94; Louisiana and Missouri River, 13; Marquette, Houghton and Ontonagon, 64½; do. pref. 114; Mexican Central, 21½; do. 7s, 73; do. inc., 22½; Massachusetts Central 6s, 21; New Mexico and Southern Pacific 7s, 113; New York and New England 6s, 114½; Oregon Short Line 6s, 95; Portsmouth, Gt. Falls and Conway, 34; do. 4½s, 84; Rutland pref., 17; Southern Kansas and Western 7s, 109½; Sonora 7s, 104½; Summit Branch, 7½; South Boston Street R. R., 70; Toledo, Cincinnati and St. Louis, 4½; do. 6s, 45; do. inc., 13½; Toledo, Delphos and Burlington Branch inc., 12½; do. 6s, S. E. div., 48; Wisconsin Central, 18½; do. pref., 30; do. 7s, 2d series, 49; Allouez Mining Co., 2½; Atlantic, 14; Franklin, 12½; Huron, 1½; Harshaw, 1; National, 1½; Napa Consol. Quicksilver, 3½; Osceola, 31; Pewabic, 8; Silver Islet, 6.

**Philadelphia.**—Am. Steamship Co. 6s, 106; Central Transp., 34; Camden and Atlantic 7s, 119; Easton and Amboy 5s, 107; Elmira and Williamsport 7s, 115½; Nesquehoning, 54; Northern Central 5s, series A, 99½; do. B, 95½; Norfolk and Western pref., 39½; Philadelphia City 6s, 1899, 133; do. 6s, 1903, 134; do. 4s, 1893, 108½; Philadelphia and Reading R. R. consol. mort., 5s, 1st series, 85; do. second series, 68; do. income 7s, 94; do. adj. scrip, 87½; do. gen'l mort. 7s, 101½; do. debent. 6s, 76; do. scrip, 105; Pennsylvania Car Trust 5s, 1890, 100; Philadelphia, Wilmington and Baltimore 4s, 93½; Pennsylvania Co. 4½s, 95; do. 6s, 108; Philadelphia, Germantown and Norristown, 107½; Philadelphia and Reading Coal and Iron debent. 7s, 77; Perkiomen 6s, 103; Shamokin Valley and Pottsville 7s, 123; Susq. Canal 6s, 71½; Schuylkill Nav. B. L., 70; Texas and Pacific 1st mort., 6s, 106; do. consol. mort. 6s, 94½; West Chester and Philadelphia 7s, 119; West Jersey and Atlantic, 32; do. 6s, 110½. The latest quotations are: Pennsylvania State 5s, new loan, 113½@117½; do. 4s, old, 110@112; do. 4s, new, 116½@117½; Philadelphia and Reading Railroad, 27@27½; do. consol. mort. 7s, reg., 125@126; do. gen'l mort. 6s, coupon, 94½@95½; do. 7s, 1893, 119@121; do. 7s, new conv., 75½@76; do. gen'l mort. 7s, 101@101½; do. consol. mort. 5s, 1st series, —@85; do. 2d series, 67@69; United New Jersey R. R. and Canal, 189½@—; Buffalo, Pittsburgh and Western, 16½@16½; Pittsburgh, Titusville and Buffalo 7s, 94@94½; Camden and Amboy mort. 6s, 1889, 112@113; Pennsylvania R. R., 59½@59½; do. general mort. 6s, coupon, 123@124; do. reg., 125@126; do. consol. mort. 6s, reg., 119½@120½; Little Schuylkill R. R., 58@59; Schuylkill Navigation pref., 14@15; do. 6s, 1882, 89@90; Elmira and Williamsport pref., 58@60; do. 5s, 99@100; Lehigh Coal and Naviga-

tion, 38½@39; do. 6s, 1884, 102½@103; do. R. R. loan, 116@117; do. Gold Loan, 111@112; do. consol. 7s, reg., 117½@118; North Pennsylvania, 66½@67; do. 6s, 103@104; do. 7s, 119@—; do. 7s, General mort. reg., —@125; Philadelphia and Erie, 20½; do. 7s, 112@113; do. 5s, 104½@105½; Minehill 62½@63½; Catawissa, 22@24; do. pref., 56½@57½; do. new pref., 54@55; do. 7s, 1900, 119@121; Lehigh Valley, 64½@64½; do. 6s, coupon, 121@122; do. reg., 121½@122; do. 7s, reg., 133@135; do. consol. mort. reg., 122@124; Fifth and Sixth streets (horse), 190@200; Second and Third, 113@117; Thirtieth and Fifteenth, 76@78; Spruce and Pine, 42½@48; Green and Coates, 75@80; Chestnut and Walnut, 89@91; Germantown, 65@70; Union, 110@—; West Philadelphia, 135@—; People's, 7½@7½; Continental, 100@103.

**Baltimore.**—Atlanta and Charlotte, 63; do. 1st, 106½; Atlantic coal, 0.90; Baltimore and Ohio 1st pref., 130; Baltimore City 6s, 1890, 113½; do. 5s, 1894, 113½; do. 5s, 1916, 122½; do. 5s, 1900, 116; do. 4s, 1920, 109½; Columbia and Greenville 1st, 1916, 101½; do. 2d, 73½; Charlotte, Columbia and Augusta, 31; George's Creek Coal, 92½; Maryland Defense, 102½; Norfolk Water 8s, 132; Northern Central 5s, series A, 100; do. B, 95½; Ohio and Mississippi, Springfield div. 1st, 116; Richmond and Danville gold 6s, 93½; Union R. R. 6s, 117½; Virginia Midland 1st mort., 114; do. 2d mort., 110; do. 3d mort., 96; do. 4th mort., 52; do. 5th mort., 97½; do. inc., 58; Virginia and Tennessee 8s, 125; Virginia Peellers, 34½; do. peeler coupons, 38½; do. 10-40 coupons, 48½; Wilmington, Columbia and Augusta, 110. The latest quotations are: Atlanta and Charlotte 1st, 106½@106½; Baltimore and Ohio, 200@202; do. 6s, 1885, 105@—; Baltimore City 6s, 1884, 101½@—; do. 6s, 1886, 106½@—; do. 6s, 1890, 113½@113½; do. 6s, 1900, 125@—; do. 6s, 1902, 126@—; do. 5s, 1894, 113½@114; do. 5s, 1916, 122½@—; Canton 6s, gold, 108@110; Marietta and Cincinnati 7s, 1891, 132@132½; do. 7s, 1896, 103½@104½; do. 8s, 1890, 55@55½; Northern Central, 55@55½; do. 6s, 1885, 103½@103½; do. 6s, 1900 gold, 114½@115; do. 6s, 1904, gold, 113½; do. 5s, Series A, 100@101; Ohio and Mississippi, Springfield div. 1st, 116½@116½; Richmond and Danville 6s, gold, 93½@94; Virginia and Tennessee 8s, 1900, 124½@125½; Virginia Midland 5th mort., 97@98; do. inc., 58@60; Virginia consol., 50@50½; do. 10-40s, 40½@40½; do. 3s, 49@50; Western Maryland 6s, end. by Washington county, 111½@112½.

#### A One-Rail Elevated Railroad.

AN exhibition of the practical workings of the trains of the Bicycle Elevated Railroad and Construction Company was had at the workshops of the company at East New York on the 8th inst. The inventor, Mr. Norman Allen, is reported to have said that the running of cars on one track is not at all dangerous, as there is a small wheel on the top of the side of the cars also running on a track, which renders it next to impossible for the train to be derailed. Mr. W. T. B. Milliken, the attorney for the patentee, felt confident that in a very short time the one-track elevated trains would supplant those now in use, as more light is given to the houses on the line and the cost of equipping and running is much less. The trials are said to have been quite satisfactory, although the trains did not go two miles a minute, as the inventor claims they can. Persons desirous of establishing a one-track elevated railroad are invited to communicate with Mr. Allen.

#### ILLINOIS CENTRAL RAILROAD COMPANY. FORTY-FIRST SEMI-ANNUAL CASH DIVIDEND.

The Board of Directors have declared a dividend of THREE AND ONE-HALF per cent in cash, payable March 1, 1883, to the shareholders of the ILLINOIS CENTRAL RAILROAD COMPANY as registered at the close of business on Feb. 10. They have also declared an extra dividend of ONE-HALF OF ONE per cent in cash, payable at the same time to said shareholders, out of the earnings of the SOUTHERN DIVISION for the six months ending Dec. 31, 1882. The stock transfer-books will be closed from and after Feb. 10, until the morning of March 5.

L. V. F. RANDOLPH, Treasurer.

New York, Jan. 18, 1883.

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At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

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## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Feio	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S. 100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point	1,232,200	semi-an	Aug. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil. pref. 100	827,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv. 100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt. M*100	225,000	semi-an	Jan. '82 3	Lowell & Andover... 100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington & Weld'n. 100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio.....100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Jan. '82 2 1/2	Wil., Col., & Aug.....100	960,000	semi-an.	Jan. '83 3
Washington Br.....100	5,000,000	semi-an	Jan. '83 3	Maine Central.....100	3,603,300	semi-an.	Feb. '83 2 1/2	Winchester & Poto'c.*100	180,000	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	Manchester & Law. 00	1,000,000	semi-an.	Nov. '82 5	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	Manhattan.....100	3,000,000	.....	.....	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Bos. & N. Y. Air Line pf. 100	2,795,227	q'arterly	June '82 1	" " 1st pref. 100	6,500,000	q'arterly	Jan. '83 1 1/2	HORSE-POWER R. R.			
Bos., Cl., F. & N. B. pref. 100	1,750,100	semi-an	Oct. '82 3 1/2	" " 2d pref. 100	6,500,000	q'arterly	Jan. '83 1 1/2	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos., Conc. & Mont. pf. 100	800,000	semi-an	Nov. '82 3	Marq. Hout. & Ont. 100	2,306,600	semi-an.	Feb. '83 4	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Boston and Lowell.....500	3,040,000	semi-an	Jan. '83 2 1/2	" " pref. 100	2,259,026	semi-an.	Feb. '83 4	Balt., Cat. & El. Mills. 100	80,000	semi-an.	Jan. '83 2 1/2
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Massachusetts*.....100	400,000	semi-an.	Feb. '83 3	Bleeker St. & Ful. F'y. 100	900,000	semi-an.	July '82 1/2
Boston & Providence 100	4,000,000	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Michigan Central.....100	18,738,204	.....	Feb. '83 2	Broadway (Brooklyn) 100	250,000	q'arterly	Oct. '82 2
Bos., Revere & Lynn 100	419,400	semi-an	Jan. '83 3	Middlesex Central... 100	280,000	semi-an.	Feb. '83 3	B'way & 7th Av. (N. Y.) 100	2,100,000	q'arterly	Oct. '82 6
Buffalo, N. Y. & Erie* 100	950,000	semi-an	Dec. '82 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5	B'klyn & Hunter's Pt. 100	400,000	semi-an.	Oct. '82 6
Buff. Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	M. Hill & Schuyl. Hav* 50	4,022,500	q'arterly	Jan. '83 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Camden & Atlantic..... 50	377,400	q'arterly	Nov. '82 3	Missouri Pacific.....100	28,169,800	semi-an.	Feb. '80 2 1/2	Bushwick (Brooklyn) 100	309,000	semi-an.	Oct. '82 6
" " pref. 50	880,650	q'arterly	Nov. '82 4	Mobile & Montgomery 100	3,022,517	semi-an.	Jan. '83 3 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
Camden & Burl. Co. 100	381,925	semi-an	Jan. '83 3	Morris and Essex..... 50	15,000,000	semi-an.	Jan. '83 3 1/2	Can. Park, N. & E. Riv. 100	1,800,000	q'arterly	Oct. '82 4
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6	Christoph'r & Tenth St. 100	650,000	semi-an.	Aug. '82 2 1/2
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua and Lowell. 100	800,000	semi-an.	Nov. '82 4	Citizens' (Phil.)..... 50	192,500	q'arterly	Jan. '82 2 1/2
Catawissa*.....100	1,159,500	annual	Oct. '82 2 1/2	Nashua & Rochester. 100	1,305,800	semi-an.	Oct. '82 1 1/2	Citizens' (Pbg.)..... 50	200,000	annual	.....'80 1 1/2
" " pref. 20	2,200,000	semi-an	Nov. '82 3 1/2	Nashv. & Decatur.....100	1,827,000	semi-an.	June '82 3	Coney Island & Bklyn 100	500,000	semi-an.	Oct. '80 5
" " new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2	Continental (Phil.).. 50	580,000	semi-an.	Jan. '83 6
Cayuga and Susq*..... 50	589,100	semi-an	Jan. '83 4 1/2	Naugatuck.....100	1,000,000	semi-an.	Jan. '83 5	D. Dock, E. B'way & Batro 100	1,200,000	q'arterly	Aug. '82 4
Cedar Rapids & Mo. R. 100	6,850,400	q'arterly	Feb. '83 1 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sept. '82 3	Eight Av. (N. Y.).....100	1,000,000	q'arterly	Oct. '82 3
" " pref. 100	769,600	semi-an	Feb. '83 3 1/2	New Castle & Beaver Val* 50	600,000	q'arterly	Oct. '82 1	42d St. & G. St. Ferry 100	747,000	q'arterly	Oct. '82 6
Central of Georgia.....100	7,500,000	semi-an	Dec. '82 4	New London North'n* 100	1,500,000	q'arterly	Jan. '83 1 1/2	Frankf. & Southw (Ph) 50	600,000	q'arterly	Oct. '82 6
Central of New Jersey 100	18,653,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R. 100	89,428,330	q'arterly	Jan. '83 2	Germantown, (Ph.).. 50	1,540,902	q'arterly	Jan. '83 2 1/2
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	N. Y. and Harlem.....100	7,950,000	q'arterly	Jan. '83 4	Girard College (Ph.).. 50	500,000	semi-an.	July '71 3
" " pref. 50	411,550	semi-an	Jan. '83 3	" " City Line..... 100	1,500,000	annual	Apr. '82 3	Grand St. & Newton. 100	170,091	semi-an.	July '81 2 1/2
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	N. Y., Lack. & West. 100	10,000,000	q'arterly	Jan. '83 1 1/2	Green & Coates St. (Ph) 50	708,650	q'arterly	Jan. '83 3
Cheshire preferred.....100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West. 100	77,087,600	.....	.....	Heston, Mantau & F'm 50	299,381	semi-an.	Jan. '75 4
Chicago and Alton.....100	11,181,741	semi-an	Mar. '83 4	" " pref. 100	7,987,500	annual	Jan. '83 6	Highland.....100	600,000	semi-an.	Jan. '83 4
" " pref. 100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart. 100	15,500,000	semi-an.	Jan. '83 5	Lomb. & South St. (Ph) 25	195,000	semi-an.	Oct. '75 4
Chi., Burl. & Quincy.....100	69,508,105	q'arterly	Mar. '83 2	N. Y., Prov. & Boston 100	3,000,000	q'arterly	Feb. '83 2	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
Chi., Iowa & Nebras* 100	3,916,200	semi-an	Jan. '83 4	Niag. Bridge & Canand* 100	1,000,000	semi-an.	Oct. '82 3	Malden and Melrose. 100	165,000	.....	.....
Chi., Mil. & St. Paul.....100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Mar. '83 3	Metropolitan (Bost.).. 100	1,500,000	semi-an.	Jan. '83 4
" " pref. 100	14,401,483	semi-an	Oct. '82 3 1/2	" " pref. 100	1,000,000	semi-an.	Mar. '83 3	Middlesex (Boston).....100	650,000	semi-an.	Nov. '82 3 1/2
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	Norfolk & Western pref. 50	15,000,000	q'arterly	Dec. '82 1	N. Y., Bay Ridge & Jam 100	150,000	.....	Oct. '78 7
" " pref. 100	21,525,353	q'arterly	Dec. '82 2	North Pennsylvania. 50	4,527,150	q'arterly	Feb. '83 1 1/2	Ninth Av. (N. Y.).....100	797,320	.....	.....
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	Northern Central.... 50	6,142,000	semi-an.	Jan. '83 4	Orange & Newark.....100	282,555	.....	.....
Chi. and West Mich.....100	6,151,000	semi-an	Feb. '83 3	Northern N. Hampsh. 100	3,068,400	semi-an.	Dec. '82 3	People's (Phila.) pref. 25	115,250	.....	July '82 2
Chi., St. P., M. & O. pref. 100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern Pacific pref. 100	41,909,132	.....	Jan. '83 11 1/2	Philadelphia City..... 50	475,000	semi-an.	July '82 4
Cin., Ham. & Dayton.....100	3,500,000	semi-an	Jan. '83 3	Norwich & Worcester* 100	2,604,400	q'arterly	Jan. '83 5	Phila. and Darby..... 20	200,000	semi-an.	July '81 3 1/2
C., Ind., St. L. & Chi. 100	6,000,000	q'arterly	Jan. '83 1 1/2	Oregon & Transcon'tl. 100	40,000,000	q'arterly	Jan. '83 1 1/2	Phila. & Grey's Ferry. 50	308,000	semi-an.	Jan. '82 6
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Clev., Col., Cin. & Ind. 100	14,991,800	.....	Feb. '83 2	Oregon R'way & Nav. 100	18,000,000	q'arterly	Feb. '83 2 1/2	Ridge Avenue (Ph.).. 50	420,000	semi-an.	Oct. '81 11
Clev. and Pittsburgh* 100	11,244,336	q'arterly	Mar. '83 1 1/2	Oswego & Syracuse. 100	1,320,400	semi-an.	Feb. '83 4 1/2	Second Avenue (N. Y.) 100	1,199,500	semi-an.	July '82 4
Columbus & Xenia*..... 50	1,786,200	q'arterly	Dec. '82 2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	Second & Third St. (Ph) 50	771,076	q'arterly	Jan. '83 4
Col., Hock. Val. & Tol. 100	10,316,500	.....	Jan. '82 2 1/2	Paterson & Hudson* 100	630,000	semi-an.	Jan. '83 4 1/2	17th & 19th sts (Ph.).. 50	250,000	semi-an.	July '81 3
Concord.....100	1,500,000	semi-an	Nov. '82 5	Paterson & Ramapo. 100	248,000	semi-an.	July '82 4	Sixth Avenue (N. Y.) 100	750,000	semi-an.	May '82 5
Concord and Ports.* 100	350,000	semi-an	Jan. '83 3 1/2	Pember. & Hightst'n* 0	342,150	semi-an.	Jan. '83 3	Somerville (Boston) 100	113,000	semi-an.	Nov. '82 3
Conn. & Passump. Riv. 100	2,244,400	semi-an	Feb. '83 3	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2	South Boston.....100	600,000	semi-an.	Jan. '83 4
Connecticut River.....100	2,100,000	semi-an	Jan. '83 4	Pennsylvania Co. .... 50	20,000,000	annual	Dec. '82 4	Third Avenue, N. Y. 100	2,009,000	q'arterly	Aug. '82 5
Cumberland Valley..... 50	1,292,950	q'arterly	Jan. '83 2 1/2	Peoria & Bureau Val* 100	1,200,000	semi-an.	Feb. '83 4	13th and 15th sts. Ph 50	334,529	q'arterly	Jan. '83 4
" " 1st pref 50	241,900	semi-an	Oct. '82 4	Philadelphia & Erie* 50	7,013,700	semi-an.	.....	23d street, N. Y. .... 100	600,000	semi-an.	Jan. '82 4
" " 2d pref 50	243,000	semi-an	Oct. '82 4	" " pfd 50	2,400,000	semi-an.	Jan. '75 4	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
Danbury & Norwalk..... 50	600,000	.....	Oct. '82 2 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Dec. '82 3	Union, Phila.....100	1,005,000	semi-an.	Jan. '82 7
Dayton and Mich.*..... 50	2,402,573	semi-an	Oct. '82 1 1/2	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2	West Philadelphia... 50	750,000	semi-an.	July '77 10
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	" " pref. 50	1,551,800	q'arterly	July '76 3 1/2	CANALS.			
Delaware*.....25	1,468,940	semi-an	Jan. '83 3	Phila. and Trenton. 100	1,259,100	q'arterly	Jan. '83 2 1/2	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
Del. & Bound Brook* 100	1,652,000	q'arterly	Feb. '83 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4	Delaware Division... 50	1,633,350	semi-an.	Feb. '83 2
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Pittab., Ft. W. & Chi. 100	19,714,285	q'arterly	Jan. '83 1 1/2	Delawa. and Hudson 100	20,000,000	q'arterly	Dec. '82 1 1/2
Denver & Rio Grande. 100	29,160,000	q'arterly	Jan. '82 1 1/2	" " Special Imp. 100	6,770,900	q'arterly	Jan. '83 1 1/2	Delaware & Raritan* 100	5,847,400	q'arterly	Jan. '83 2 1/2
Detroit, Lans. & Nor. 100	1,825,600	semi-an	Feb. '83 3	Pittsfield & N. Adams. 100	450,000	semi-an.	Jan. '83 2 1/2	Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82 2
" " pref. 100	2,503,380	semi-an	Feb. '83 3 1/2	Portl., Saco & Portam 100	1,500,000	semi-an.	Jan. '83 3	Monongahela Nav..... 50	1,004,500	semi-an.	Jan. '83 3
Dubuque & Sioux C'y* 100	5,000,000	semi-an	Oct. '82 3	Providence & Worces. 100	2,000,000	semi-an.	Jan. '83 3	Morris, consolidated. 100	1,025,000	semi-an.	Aug. '82 2
East Pennsylvania*..... 50	1,709,550	semi-an	Jan. '83 3	Rensselaer & Saratog. 100	7,000,000	semi-an.	Jan. '83 4	" " preferred..... 100	1,175,000	semi-an.	Aug. '82 5
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Richmond & Danv. 100	5,000,000	q'arterly	Aug. '82 2	Pennsylvania..... 50	4,501,200	.....	.....
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Petersb. 100	1,009,300	q'arterly	Aug. '82 2	Schuyl. Nav., com.* 50	859,100	annual.	Oct. '82 sec.
Eel River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Roch. & Genesee Val. 100	555,200	semi-an.	Jan. '83 3	" " pref. 50	3,200,000	annual.	Oct. '82 1
Elmira & Williams p't* 50	500,000	semi-an	Nov. '82 1 1/2	Rome Water & Ogdens 100	5,293,900	.....	Jan. '83 3	MISCELLANEOUS.			
" " pref. 50	500,000	semi-an	Jan. '83 3 1/2	Rutland preferred..... 100	4,000,000	semi-an.	Sept. '82 1	Adams Express.....100	12,000,000	q'arterly	Dec. '82 2
Erie and Pittsburgh* 50	1,998,400	q'arterly	Dec. '82 1 1/2	Spyten Du'vil & Pt. M. 100	989,000	semi-an.	Jan. '				

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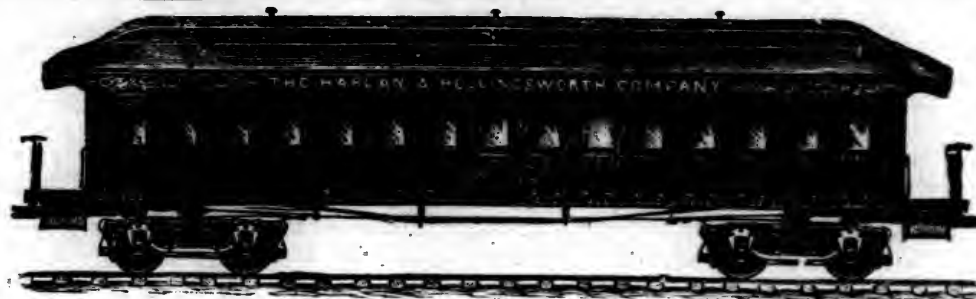
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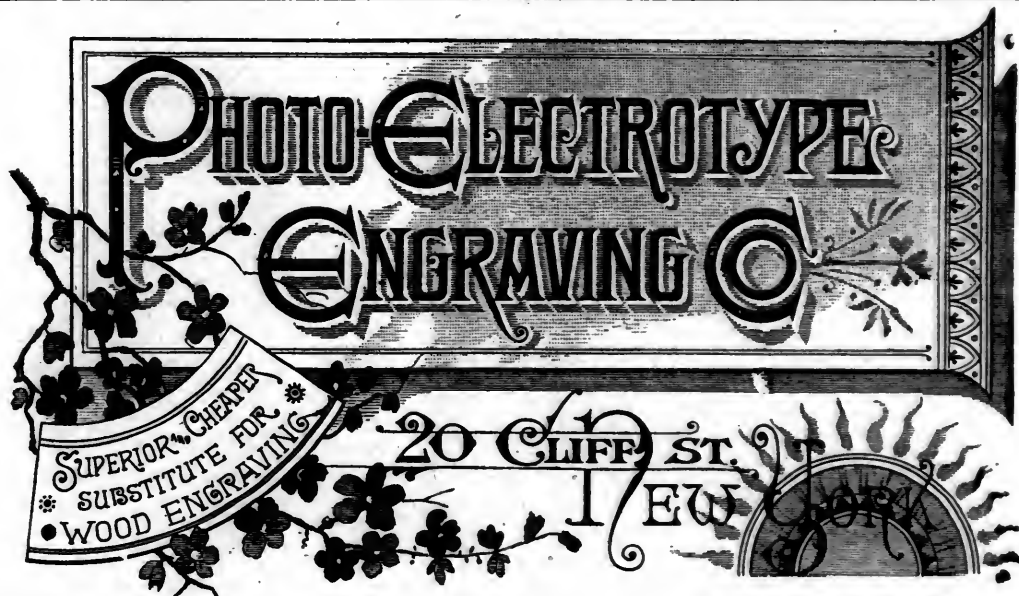
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Letters respecting the financial affairs of the Company should be addressed—

**H. F. WORRALL, Treasurer, 8 Exchange Place, Boston, Mass.**



## RAILROAD EARNINGS.—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	246,662	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,930	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,809,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,066	262,858	247,144	236,396	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	666,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,609,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,470,664	1,430,204	1,778,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	982,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,569,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,502	383,202	385,886	373,370	379,629	392,921	432,615	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,796	4,973,652
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,056	192,299	177,161	229,858	228,653	221,320	211,014	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	388,493	333,111	514,767	584,230	548,284	589,193	638,432	547,055	624,728	646,812	6,349,857
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	626,728	6,349,857
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,303,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,563	249,252	239,891	2,230,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	703,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	203,677	200,064	199,846	190,125	227,114	247,332	225,672	200,450	192,622	2,647,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	205,212	2,641,075
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,368	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	200,262	256,924	262,986	258,812	2,403,224
1882.....	159,676	158,590	148,166	141,957	134,378	135,184	135,174	137,475	157,874	267,433	295,110	307,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	160,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,691	161,005	154,155	135,550	119,074	160,991	168,304	168,999	180,319	181,336	182,382	2,048,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	240,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,211	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,321
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	320,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	509,683	667,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,984	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,231</								

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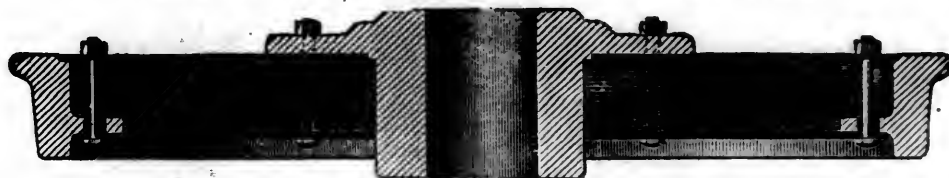
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## CANADIAN DEPARTMENT.

MR. JAMES J. WHITE, Ottawa, Canada, writer of "Our Canadian Letter," acts as agent for the AMERICAN RAILROAD JOURNAL COMPANY, in Canada. He is authorized to receive, in behalf of the company, subscriptions and advertisements for this journal; also news of the character which he can utilize in the preparation of his Letter, or send to us for use elsewhere within these columns. He respectfully invites information concerning Railroad matters generally, Mining, Banking, Finance and Manufactures.

## OUR CANADIAN LETTER.

[From our Special Correspondent.]

On Thursday last the members-elect of the Dominion Parliament took the oath of allegiance and signed the test roll. The Hon. G. Kirkpatrick, member for Frontenac, is the new speaker. On Friday the formal opening of the first session of the Fifth Parliament took place. His Excellency the Governor-General arrived at the Parliament House at three o'clock; he was accompanied by his staff and a military escort. Shortly after he reached the Senate Chamber, the members of the House appeared at the bar of the Senate, their speaker informing His Excellency that he had been elected speaker of the House of Commons. On behalf of the Commons he claimed for them the usual privileges of freedom of speech, access to His Excellency's person at all seasonable times, and the most favorable consideration for their deliberations. The speaker of the Senate assured the speaker of His Excellency's confidence in their wisdom and prudence, and promised them on behalf of His Excellency, the customary privileges. The Governor-General in his speech congratulates the Honorable gentlemen of the Senate and the gentlemen of the House of Commons, on the auspicious circumstances under which they begin their labors, on the general prosperity of Canada, etc., on his visit to British Columbia, the natural resources of the Province, and the great prosperity in store for the Province as soon as the Canadian Pacific Railway is completed. Alluding to the United States he said: "While passing through the United States I was rejoiced to observe many evidences of regard for the Empire of which this country forms so large a portion. May this friendship, which is so fully returned by us, be as enduring as it is natural and advantageous to the mutual interests of both great nations!" He spoke encouragingly of emigration and the development of Manitoba in the northwest; of a measure to be submitted relating to representation in Parliament which should be amended, and the electoral franchise in the several Provinces assimilated; that legislation by the Dominion Parliament would be necessary—to prevent the unrestrained sale of intoxicating liquors—by regulating the granting of shop, saloon and tavern licenses; of measures to be submitted regulating factory labor, and the protection of the workingman and his family; of bills to be introduced for the consolidation and amendment of the laws relating to customs, the militia, and the public lands; also respecting the civil service, and acts relating to banking and the examination of masters and mates of vessels navigating inland

(Canadian) waters; of the unprecedented progress of the Canadian Pacific Railway, and that it was confidently expected that the Rocky Mountains would be reached this year, and within the same period substantial progress made on the Lake Superior station, and the track laid on a large portion of the road now under construction in British Columbia. That traffic on the Intercolonial railway is largely in excess of former years, and the balance in favor of the road shows a gratifying increase; that the expenditure on capital account amounted to more than \$7,000,000 surplus of the consolidated revenue, together with the proceeds of the sales of the lands in the northwest during last year, were more than sufficient to cover that expenditure; and that the net debt at the close of the year and the amount of interest paid thereon were less than for the year previous; that the estimates for the ensuing year have been prepared with all due economy consistent with the necessary development of the varied resources of the Dominion. On the 1st of January, 1885, the large five per cent loan will mature; a bill would be submitted authorizing the issue of debentures bearing a rate of interest not exceeding four per cent, for the redemption of this loan.

Shortly after delivering his speech the Governor-General left for Rideau Hall, and the vast concourse inside and outside slowly dispersed.

A State dinner was given at Rideau Hall on Friday evening, at which all the dignitaries and notables of the Capital were present. After the dinner the wives and daughters of his guests were received by His Excellency.

Mr. Dalton McCarthy will introduce a bill to constitute a Court of Railway Commissioners, and also a bill to further amend the Consolidated Railway Act of 1879.

The Government will shortly transfer the control of the Canadian Pacific Railway from Prince Arthur's Landing to Rat Portage.

At the annual meeting of the shareholders of the Ottawa and Gatineau Valley Railway on Wednesday last, J. M. Currier was elected president, C. H. Mackintosh vice-president, H. B. Mackintosh secretary, and I. M. Mitchell, managing director and engineer-in-chief.

Senator Howlan has gone to Detroit in order to ascertain more fully the views of some of the gentlemen who represent the National Board of Trade of the United States, in relation to reciprocal trade with Canada. Reciprocity is just now attracting considerable attention. "Le Courier de Montreal," one of the best conducted journals in Canada, in commenting upon an editorial copied from the AMERICAN RAILROAD JOURNAL on Commercial Treaties with Mexico, Canada and the Sandwich Islands, fully endorses the JOURNAL.

A Department of Indian affairs has been created with Sir John A. Macdonald as Minister, and with the title of Superintendent General.

It is said that Mr. Dean, of Dean, Westbrook & Krauss, of Philadelphia, has been awarded the contract of the traffic and railway bridge at Emerson, Manitoba, the cost of which will be about \$200,000.

Great pressure is brought to bear on the Government in support of the free canal movement, and the matter will come up, it is thought, early in the session.

OTTAWA, Feb. 15, 1883.

"W."

ENGINES are now in course of construction at the works of James Reese & Sons, Pittsburgh, Penn., to propel a boat where previously only the canoe of the Indian and the batteaux of the traders were seen. The new field is the Saskatchewan, in the Dominion of Canada, whose waters run into the polar regions of Hudson's Bay. Capt. John Todd, of Beaver, a navigator to whom the headwaters of the Missouri, Yellowstone, etc., are familiar, is here for the purpose of having these engines built. They will be shipped via Northern Pacific and Canada Pacific railroads to Belly River, a branch of the Saskatchewan, where the boat is to be built under Capt. T.'s direction. She will be 175 feet long, with 31 feet beam, and 3½ feet depth. The place selected is near Fort McLeod, some distance north of the Montana line and west of British Columbia.

DEPOSITIONS taken at Richmond, Va., before a notary to be used in a suit brought in Chicago by the Pullman Palace Car Company against an Illinois road for using sleepers on its line without paying a royalty, show that sleeping-cars were used on the Richmond and Fredericksburg Railroad forty years ago. Among those whose depositions have been taken in this case are Col. Thomas Dodamead, for many years superintendent of the Richmond and Danville Railroad; W. N. Bragg, formerly master car-builder on the Richmond and Fredericksburg Railroad, and master machinist Kahn.

It is said that the St. Gothard Tunnel is diverting the bulk of the Italian trade into the hands of the Belgians, Germans, and Hollanders with startling rapidity. Without breaking bulk early fruits are taken from all parts of Italy to Ostend, Antwerp, and Rotterdam, whence they are carried by fast steamers to London and other English ports. But, on the other hand, Germany is sending into Italy large quantities of coal, iron, machinery, copper, and other articles, of which the latter received nothing before. In two months alone the Italians imported 1,446 tons of paper.

THE Harlan & Hollingsworth Company, of Wilmington, Del., have contracted to build a steam timber dredger for D. F. Sullivan, of Pensacola, Florida. She will be 200 feet keel, thirty-four feet beam, and seventeen feet hold, and have compound engines 28x44x4 feet, turning a propeller wheel 20 feet in diameter. She will be schooner-rigged and unlike anything ever before constructed in this country.

THE Roebling Wire Mill, of Trenton, has just shipped to San Francisco by the Pennsylvania Railroad a wire street-railway rope 1½ inches in diameter, over four miles long and weighing twenty-five tons. It is said to be the longest and heaviest rope ever made in the country.

THE Secretary of the Interior has decided that railroads are not, by the terms of the act of March 3, 1875, limited to the lands immediately adjoining the road in cutting ties and obtaining other construction material intended for the use of the railroad.

THE new Central Passenger Railway of Baltimore commenced operations on the 7th inst. Twenty cars are now running at intervals of six minutes.

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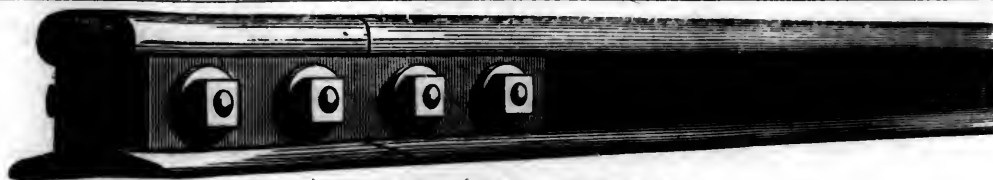
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The W. Ryder Double-Acting Grate Bars are so constructed as to rest upon a frame with friction rollers, and by means of a lever attached to the front rocking bar, a reverse or reciprocal motion is produced in each bar which effectually breaks up the clinkers, and removes all the ashes from the bottom of the furnace.

By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop its working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.



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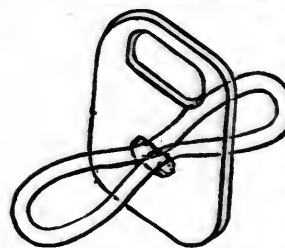
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Patented August 29, 1882.



The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six pounds.

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No. 21 Park Place,  
NEW YORK.



## STREET CAR DEPARTMENT.

### An Important Step Toward Unity of Action.

THE formal organization on the 12th of December last, of the American Street Railway Association, was the first step taken toward the union of interests on the part of street roads. The importance of this branch of passenger transportation can hardly be over estimated. The street railways are almost as essential to a city's prosperity as the streets themselves. They are the arteries of locomotion, and scarcely a person however humble fails to avail himself of the facilities for cheap and rapid travel thus afforded hundreds of times in the course of a year. It seems singular that street railways with their thousands of miles of finished road and millions of active capital should hitherto lack organized unity, but it is gratifying to learn that their first efforts in this direction have been characterized with prudence, deliberation and common sense.

We hope in an ensuing number to present in detail the aims and objects of this association through a communication from one of its active officers, and we will not anticipate that gentleman, nor take the liberty of stating at length the purposes of an organization which is yet in embryo; but an examination of the verbatim report of the December meeting held in Boston reveals one or two striking facts of a most satisfactory nature. The adoption of a Constitution and By-Laws was not accomplished without considerable debate, and thus the association at the outset is given a well digested plan of action, not a series of ill-considered regulations, impracticable and liable to constant change. The annual dues are fixed at a very moderate sum, and no distinction is made between small companies and those of greater wealth and importance. Every company pays the same fees and dues, and each is entitled to one vote. Over this fundamental principle much argument was held. It was urged by some that a *pro rata* system of assessment would be a most equitable arrangement, each company being assessed according to the number of cars in actual use on its road. Various resolutions were offered to accomplish this end, but eventually it was decided to admit all roads upon an equal basis of representation. We cannot help thinking this step a wise one, more clearly in accord with the general objects of the association as stated in article II of its constitution. The organization is thus confined to working for the general benefit of all street railways, and prevented from entering into litigation on behalf of a few roads whose financial resources may be great. In the words of a prominent gentleman present at the meeting, it was not the object of the association to enter into law-suits or defend patents, and in no way was it a protective organization. Certain it is that the association will meet with greater public favor and approval without this protective feature, which to some might seem to possess a flavor of monopoly. There are over four hundred street railways in America, and fifty-six were represented at the convention. This was an excellent showing

for a first meeting, and it is safe to predict that the number will be more than doubled when next the association meets. Considering the small expense incurred and the simple yet important objects of the association, it seems most likely that every street railway in America will ultimately enroll themselves as members.

The second regular meeting of the association will be held in Chicago, Ill., on the 9th of October next, and on this occasion it is our intention to have a representative of the JOURNAL present, to report in detail the actions of the delegates. We fully recognize the claims of street railways as institutions of public usefulness and benefit, and we shall every week devote a portion of our space to their interests.

### Constitution, By-Laws and Officers of the A. S. R. A.

WE append the Constitution and By-Laws of the American Street Railway Association, and shall mail copies of this number to the officers of every street railway company whose *locus* we can obtain. Full reports of the recent meeting can be obtained upon application to the Secretary and Treasurer. We would call particular attention to Article II of the Constitution, which defines the object of the organization:

#### CONSTITUTION.

##### NAME.

I. The name of the Association shall be THE AMERICAN STREET-RAILWAY ASSOCIATION, and its office shall be at the place where the Secretary resides.

##### OBJECT.

II. The object of this Association shall be the acquisition of experimental, statistical and scientific knowledge relating to the construction, equipment and operation of street railways, and the diffusion of this knowledge among the members of this Association, with the view of increasing the accommodation of passengers, improving the service and reducing its cost; the establishment and maintenance of a spirit of fraternity among the members of the Association by social intercourse, and the encouragement of cordial and friendly relations between the roads and the public.

##### MEMBERS.

III. The members of this Association shall consist of American Street-Railway Companies, or lessees, or individual owners of street railways, and each member shall be entitled to one vote by a delegation presenting proper credentials.

##### AMENDMENT.

IV. This Constitution may be amended by a two-thirds vote of the members present at a regular meeting, after the proposed amendment shall have been submitted, in writing, at the preceding regular meeting and a copy sent to each of the members.

##### BY-LAWS.

##### APPLICANTS.

ARTICLE I. Every applicant for membership shall signify the same, in writing, to the Secretary, inclosing the requisite fee, and shall sign the Constitution and By-Laws.

##### OFFICERS.

II. The officers shall consist of a President, three Vice-Presidents, and five others, who shall constitute the Executive Committee, and a Secretary and a Treasurer. The Executive Committee shall have the entire charge and management of the affairs of the Association. The Officers and Executive Committee shall be elected by ballot, at each regular meeting of the Association, and shall hold office until their successors shall be elected. The duties of Secretary and Treasurer shall be performed by the same person. The Secretary and Treasurer shall not be a member of the Executive Committee.

##### DUTIES OF OFFICERS.

III. The officers of the Association shall assume their duties immediately after the close of the meeting at which they are elected; they shall hold meetings at the

call of the President, or in his absence, at the call of the Vice-Presidents, in their order, and make arrangements for carrying out the objects of the Association.

##### PRESIDENT.

IV. The President, if present, or, in his absence, one of the Vice-Presidents, in their order, if present, shall preside at all meetings of the Association and of the Executive Committee.

##### TREASURER.

V. The duties of the Treasurer shall be to receive and safely keep all moneys of the Association; to keep correct accounts of the same, and pay all bills approved by the President; and he shall make annual report to be submitted to the Association. He shall give a bond to the President in such sum and with such sureties as shall be approved by the Executive Committee.

##### SECRETARY.

VI. The duties of the Secretary shall be to take minutes of all proceedings of the Association and of the Executive Committee, and enter them in proper books for the purpose. He shall conduct the correspondence of the Association, read minutes and notices of all the meetings, and also papers and communications, if the authors wish it, and perform whatever duties may be required in the Constitution and By-Laws appertaining to his department. He shall be paid a salary, to be fixed by the Executive Committee.

##### MEETINGS.

VII. The regular meeting of the Association shall be held on the second Tuesday in October in each year, at such hour and place as shall be designated at the preceding meeting. Special meetings may be held upon the order of the Executive Committee. Notice of every meeting shall be given by the Secretary, in a circular addressed to each member at least thirty days before the time of meeting. Fifteen members shall constitute a quorum of any meeting.

##### ORDER OF BUSINESS.

VIII. At the regular meeting of the Association the order of business shall be:

1. The reading of the minutes of the last meeting.
2. The address of the President.
3. The report of the Executive Committee on the management of the Association during the previous year.
4. The report of the Treasurer.
5. Reports of Special Committees.
6. The election of Officers.
7. The reading and discussion of papers of which notice has been given to the Secretary at least thirty days prior to the meeting.
8. General business.

IX. At other general meetings of the Association, the order of business shall be the same, except as to the 3d, 4th and 6th clauses.

##### NOTICES.

X. The Secretary shall send notices to all members of the Association, at least thirty days before each meeting, mentioning the papers to be read and any special business to be brought before the meeting.

##### EXECUTIVE COMMITTEE.

XI. The Executive Committee shall meet one hour before each meeting of the Association; and, on other occasions when the President shall deem it necessary, upon such reasonable notice, specifying the business to be attended to, as the Committee shall, by vote, determine.

##### VOTING.

XII. All votes, except as herein otherwise provided, shall be *viva voce*; and, in case of a tie, the presiding officer may vote.

##### NON-MEMBERS.

XIII. Any member, with the concurrence of the presiding officer, may admit a friend to each meeting of the Association; but such person shall not take any part in the discussion, unless permitted by the meeting.

##### READING OF PAPERS.

XIV. All papers read at the meetings of the Association must relate to matters connected with the objects of the Association, and must be approved by the Executive Committee before being read, unless notice of the same shall have been previously given to the Secretary, as hereinbefore provided.

##### PAPERS, DRAWINGS AND MODELS.

XV. All papers, drawings or models submitted to the meeting of the Association shall remain the property of the owners; subject, however, to be retained by the Executive Committee for examination and use, but at the owner's risk.

## FEES.

XVI. Members shall pay an initiation fee of twenty-five dollars, and annual dues of fifteen dollars, payable in advance. The Executive Committee shall have no power to expend, for any purpose whatever, an amount exceeding that received, as hereinbefore provided for. It shall be the duty of members to make such returns to the Secretary as shall be required by the Executive Committee.

## ARREARS.

XVII. No member whose annual payment shall be in arrears shall be entitled to vote.

## WITHDRAWAL.

XVIII. Any member may retire from membership, by giving written notice to that effect to the Secretary, and the payment of all annual dues to that date; but shall remain a member, and liable to the payment of annual dues, till such payments are made, except as hereinafter provided.

## EXPULSION.

XIX. A member may be expelled from the Association, by ballot of two-thirds of the members voting, at any regular meeting of the Association, upon the written recommendation of the Executive Committee.

## RULES OF ORDER.

XX. All rules not provided for in these By-Laws shall be those found in Cushing's Manual.

## AMENDMENT.

XXI. All propositions for adding to or altering any of these By-Laws shall be laid before the Executive Committee, which shall bring them before the next regular meeting of the Association, if it shall think fit, and it shall be the duty of the Committee to do so, on the request, in writing, of any five members of the Association.

## CONSTITUTION AND BY-LAWS.

XXII. Each member of the Association shall be furnished by the Secretary with a copy of the Constitution and By-Laws of the Association, and also a list of the names and residences of the members.

The officers of the association for the current year are as follows:

PRESIDENT: H. H. LITTELL,

General Manager, Louisville City Railway Company, Louisville, Ky.

FIRST VICE-PRESIDENT: WILLIAM H. HAZZARD,

President, Brooklyn City Railroad Company, Brooklyn, N. Y.

SECOND VICE-PRESIDENT: CALVIN A. RICHARDS,

President, Metropolitan Railroad Company, Boston, Mass.

THIRD VICE-PRESIDENT: GEORGE B. KERPER,

President, Mt. Adams and Eden Park Inclined Railway Company, Cincinnati, O.

SECRETARY AND TREASURER: WILLIAM J. RICHARDSON,

Secretary, Atlantic Avenue Railroad Company, Brooklyn, N. Y.

## EXECUTIVE COMMITTEE.

PRESIDENT, VICE-PRESIDENTS and

JULIUS S. WALSH, Pres. Citizen's Railway Co., St. Louis, Mo.

CHARLES CLEMINSHAW, Vice-Pres. Troy and Lansingburgh Railroad Co., Troy, N. Y.

THOMAS LOWRY, Pres. Minneapolis Street Railway Co., Minneapolis, Minn.

JAMES K. LAKE, Supt., Chicago West Division Railway, Chicago, Ill.

D. F. LONGSTREET, Gen'l Manager, Union Railroad Co., Providence, R. I.

## STREET RAILWAY NOTES.

THE AMERICAN RAILROAD JOURNAL is the oldest railroad publication in the world—the first periodical ever published in the interests of railroads, and it made its appearance when the giant power of steam locomotion was in its infancy. Fifty-two years after, it is the first publication to espouse the interests of street railways, and provide them with an exponent of their views, necessities and difficulties.

In conducting the street railway department of the AMERICAN RAILROAD JOURNAL, we are

naturally solicitous of obtaining free and full opinions on the live questions which are of interest to those connected with surface roads. Communications of this nature will be gladly welcomed, and we shall endeavor to conduct the department with vigor. As an indication of what subjects are of leading interest, we enumerate the titles of several committees appointed at the recent meeting of the Street Railway Association:

Track-Construction.

Propelling Power.

Buildings.

Labor and Wages.

Collection of Fares.

Removing Snow and Ice.

Horse-shoeing.

Heating and Lighting.

Papers will be prepared on these subjects and read at the October meeting.

WE would like to receive some definite information as to the present status of elevated roads relative to street railways. The Constitution of the association of the latter does not touch upon this point, which is consequently left in doubt. It is true that there is at present but one city in the western continent which boasts of elevated roads, but this number may increase, and it would be well at the start to have them relegated to their proper sphere. In fact we offer a suggestion to the Street Railway Association that they define clearly their construction of the meaning of *street railway*, and not leave it open for general interpretation. If the use of steam as a motive power is to debar all roads employing it from joining the association, it must be borne in mind that many surface roads employ dummy engines in their ordinary passenger travel, while the simple use of an elevated road-bed is by no means confined to the New York elevated roads. It is customary to seek interpretation of the laws from the word of lawyers, and emulating this example we would like to receive the definition of "street railway" from the railways themselves promising to confine ourselves to the limitations thus proscribed.

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### Shay's Improved Locomotive.

SHAY'S Improved Locomotive is the invention of E. Shay, of Haring, Mich., who manufactures it at the Lima Machine Works, at Lima, Ohio, and at the Michigan Iron Works, Cadillac, Mich. It was first designed to work on wood rail, short curves and steep grades, the inventor being at the time engaged in manufacturing pine lumber. He had first built a locomotive of the usual form, and not meeting with the success desired in operation, began a series of experiments extending for years, and at considerable expense, to perfect a locomotive to meet the requirements of lumbermen, where tracks must be laid to where the timber is, not admitting the selection of suitable grades, curves, etc., which usually is admissible in roads of ordinary construction. His locomotive is found to be adapted to these requirements, and consists in placing the driving-wheels in truck frames which are free to swivel and vibrate independently of the locomotive frame, and thereby adjust themselves to curves and irregularities of track with the least possible friction. The locomotive frame, including water and fuel, rests on the trucks, and the entire weight is useful for traction.

The mechanism used is not new, simply a new combination of machinery in common use, and consists of a boiler and engine differing only in their location from those in general use—they being rigidly attached to each other and to the locomotive frame. The trucks, the wheels of which are the drivers, are located at the ends of the locomotive frame and attached to it by swivel boxes in substantially the same manner as the trucks of ordinary cars are attached to the body. The power is conveyed from engine to drivers by means of universal joints and expansion couplings forming a flexible shaft, which is rigid in revolution, but flexible in every other direction, and in practice is found to be trustworthy and efficient. The plan of construction admits of using a light rail successfully, the weight of locomotive being distributed on eight drivers, or more if desired; and placing drivers in form of trucks allows short curves to be used with much less friction than if the drivers were rigid on the frame. For use on standard-gauge roads the plan provides for a locomotive of immense power to work around short curves, up steep grades, etc. The boiler and engine can be of any size and power desirable, the drivers and driving axles not being in the way in construction, and their number allowing of large trac-

tion power without injury to rail or drivers.

Mr. Shay has invented recently a new joint to use on his locomotive, which will not be offered for sale. There are practically but three pieces to it, and not a bolt, nut, screw or key to get loose. It has been found to be of abundant strength to stand the direct thrust of engines for locomotive work. A joint  $5\frac{1}{2}$  in. in diameter has ten square inches of iron to resist breaking, and a wearing surface of seven inches on each side. All the parts work from a common center.

The Lima Machine Works, of Lima, Ohio, are building engines to draw loads up grades six and one-half feet per hundred, and empty trains up eight and one-half feet per hundred. Use boilers specially designed for such service.

A NEW size of anthracite, known as "corn," is being put on the market at some of the collieries.



SHAY'S IMPROVED LOCOMOTIVE.

MR. GEORGE P. GEER of Springfield, Mass., has recently published the results of his efforts to reduce the labor of book-keeping, and his work is a valuable contribution to mercantile literature. His system has been in use by him for years, and is a surprising improvement over those ordinarily used in business practice. The various chapters of the book are devoted to the treatment of special subjects, many of which are entirely new in a work of the kind. We may instance, as specimen chapters, his description of the methods of keeping the capital stock account, the balance account, the mining, factory, labor, farm accounts, etc., the keeping of books for partnerships and corporations, the declaring of dividends, the auditing of accounts, the chapter on negotiable paper, and that on the keeping of accounts by executors, administrators, trustees and assignees. Many of these subjects receive treatment for the first time, and have never before been put in print. The chief aim of the book is in the direction of labor-saving, and accountants will find it a most useful aid and instructor. Mr. Geer's work is sold for \$3.00 and will be sent by mail upon receipt of price by the publishers, Clark W. Bryan & Co., of Holyoke, Mass.

In the case of Collins vs. the Sioux City and Pacific Railroad Company, the Secretary of the Interior holds that a failure on the part of the company to carry out a proviso in its land grant that such land as was not sold within three years after the completion of the road should be opened to preemption, the price realized to be returned to the company, does not derogate from the grant, nor can it operate to defeat the same or cause the lands to revert to the United States. In this case the company sold the lands, and although not within the three years' limit, it is held that this sale must be regarded as a disposal of the lands such as the statute contemplated. The Secretary says that, even if it were intended that the land should be disposed of as public lands, the purpose of the act is defeated through its failure to provide the adequate machinery for the use of the Executive Department.

MR. R. SMITH, of the Russell House, Emerson, has adorned his bar with a memento of his railroading days. It consists of a cast-iron colored boy about three feet in height, and very artistically painted. For fifteen years the little darkey rode on the cowcatcher of Mr. Smith's engine on the G. T. R. and the C. P. R. The owner of this slave had good luck with it and never ran over an animal in all those years while it held the

flag in front of the iron horse.

THE monthly report of the National Cotton Exchange, as made by secretary C. H. Parker, showing the cotton movement of the United States from September to the close of January, gives the overland movement direct from the producers as 721,322 bales, against 659,864 last year; to mills direct, 390,243, against 355,447. The January shipments to mills were 79,390 bales, against 26,399 last year and 76,887 the year before.

THE Tuscarawas Valley and Wheeling Railway, which was sold at Cleveland, Ohio, on the 5th inst., by order of Court, was purchased by O. B. Perkins, trustee, for \$3,252,500, who paid the amount in bonds of the road.

THE proportions of the human figure are seven times the length of the foot. This is identically the proportion between the length and breadth of an Esterbrook Commercial pen.

WHAT a man knows should find its expression in what he does. The value of superior knowledge is chiefly in that it leads to a performing manhood.—Bovee.

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## A FREE GIFT.

Any of our readers who will enclose two three-cent stamps in a letter to the **Columbus Buggy Co., Columbus, O.,** will receive in return a beautiful engraving in colors, representing an **Australian scene**, and their manner of traveling in that country with **Ostriches** as a motor. They give this picture, (the packing costing six cents), to all who may send for it, desiring in this manner to make themselves more widely known to the people.

[Mention this paper.]

ESTABLISHED 1842.

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## Inventors, Read This.

1. THE AMERICAN RAILROAD JOURNAL gives great prominence to descriptions of such new inventions as relate to its proper class of subjects.

2. Its columns contain at least a notice of every patent granted in the United States upon railroad and kindred inventions. In many cases more than this is desirable, and

3. Its editors invite communications from inventors regarding their inventions.

4. Such communications are treated with a view to their publication, and appear within these columns in all cases when this is desirable.

5. This is the oldest railroad journal in the world, and therefore

6. Inventors cannot do themselves better service in order to advance their interests, than to act upon the foregoing information.

### List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF FEBRUARY 6, 1883.

- 271,585. Draw-Bar for Cars: Charles Alkin, Chicago, Ill.  
 271,609. Car-Coupling: Levi Davis, Jr., Alton, Ill.  
 271,611. Device for Raising and Lining Railroad Tracks: William R. Dickerson, North Bend, Nebr.  
 271,655. Car-Coupling: John J. Pursley, Wetmore, Kan.  
 271,661. Car Starter: Alfred W. Smith, Boston, Mass.  
 271,674. Car-Coupling: William L. Albright, Cincinnati, Ohio.  
 271,677. Grain Car Door: William J. Arndt, Detroit, Mich.  
 271,680. Car-Wheel Boring and Truing Machine: William P. Barclay, Chicago, Ill.  
 271,685. Car Coupling: William Crandell, Westfield, N.Y.  
 271,695. Stock-Car: Job C. Foster, St. John, Cal.  
 271,721. Electric Brake-Setting Apparatus: Jesse B. Low, Pulaski, N. Y.  
 271,727. Construction of Railways: Daniel J. Miller, Chicago, Ill.  
 271,729. Oscillating Valve: Matthew R. Moore, Indianapolis, Ind.  
 271,741. Steam-Engine: F. J. Roth, Cincinnati, Ohio.  
 271,761. Cut-Off: Charles P. Allen, Denver, Colo.  
 271,773. Car-Brake: Benjamin Bennett, Hyde Park, Pa.  
 271,781. Steam-Engine: Benjamin Brazelle, St. Louis, Mo.  
 271,794. Automatic High and Low Water Indicator for Steam-Boilers: Bernard Collins, Kennerdell, Pa.  
 271,821. Apparatus for Purifying Water for Boilers: Charles Elliott, San Francisco, Cal.  
 271,823. Device for Manufacturing Car-Wheel Tires: James A. Facer and Adolph Schaub, Philadelphia, Pa.  
 271,850. Car-Coupling: Llewellyn A. Houghtaling, Elmira, N. Y.  
 271,867. Berth-Lock for Sleeping-Cars: John Kirby, Jr., Ludlow, Ky.  
 271,876. Signal and Alarm for Railroad Crossings: Herman H. Liemke, St. Louis, Mo.  
 271,882. Electro-Magnetic Car-Signal: John W. Marley, Chicago, Ill.  
 271,885. Method of and Apparatus for Heating Cars: Joshua Mason, Paterson, N. J.  
 271,887. Handle for Steam-Valves: Francis I. Maule, Philadelphia, Pa.  
 271,896. Car-Coupling: Sylvester H. Milligan, near McCluney, Ohio.  
 271,910. Spark-Arrester: Thomas Patterson, Stratford, Ontario, Canada.  
 271,941. Chuck: James Sleeth and Francis M. Lucas, Morristown, Ind.  
 271,951. Car-Coupling: John G. Trenear, Huntington, W. Va.  
 271,955. Nut-Lock: John J. Waddill, Montgomery, Ala.

- 271,957. Grain-Door: Robert J. Walker, Girard, Ill.  
 271,958. Railroad Train Telegraph: William T. Waters, Atlanta, Ga.  
 271,976. Fare Register and Recorder: John W. Fowler, and Daniel F. Lewis, Brooklyn, N. Y.  
 271,985. Station-Indicator: Geo. P. Rasck, Des Moines, Iowa.  
 271,989. Smoke-Burning Furnace: John Ritchie, Chicago, Ill.  
 271,990. Car-Coupling: John J. Roberts, Shongelo, Miss.  
 271,999. Automatic Switch-Stand: Oliver J. True, Port Clinton, and Henry H. Houghton, Elyria, Ohio.  
 272,009. Car-Coupling: J. Thompson Wright, New Albany, Ind.  
 272,012. Motor for use near Railways: Robt. Zinsmaier and Merritt Burt, Gallon, Ohio.

[Written for the American Railroad Journal].

### Conversion of Wave and Tide Motions into Power, and its Transmission to a Distance.

BY W. L. SILVEY.

THE rapid disappearance of vast forests, and the fact that numerous coal mines are already exhausted, tend to rouse us to a sense of the danger for the future, and the inquiry naturally arises—should the exhaustion be carried much farther where will we get power to animate the sinews of our prime motor? Does nature afford a cheap, safe and reliable substitute for the expensive steam engine? The most plausible plan which has suggested itself to the author is to utilize the force of ocean tides and waves. Now as to waves there seems one grave objection to their use on account of their very irregular actions, at one time being quick and boisterous, at others slow and gentle, while ever and anon they sink to the placid ripple. These irregular actions make waves unreliable, for they may die away at the very time when greatest power is needed, leaving our sinewed giants of steel a motionless, inanimate mass. Instead of being thus irregular tides can be at all times relied on, they being very regular in their motions as well as powerful in their actions, their most serious obstacle being the best plan for storing or utilizing this incalculable mass of semi-latent energy. Enough power rolls upon our coasts unused to drive every motor in the land.

At New York the tide rises  $4\frac{1}{2}$  feet, at Boston 10 feet, at the head of the bay of Fundy 70 feet, at Charleston 5 feet, at London docks 17 feet, at St. Malo 26, and in the Chesapeake bay 15 feet, which very readily suggests the enormous power that every day goes unused. Let New York, Boston, Charleston or London store up and utilize this force, they have enough power to drive all their factories, etc., without the necessity of moving a single steam engine. Take Boston as an example: the amount of power that might be stored on one acre with a height of 10 feet reaches the enormous figure of 27,225,000 pounds every twelve hours, or 54,450,000 pounds every day, of which at least 50 per cent could be transmitted to the distance of 25 miles. Utilize this enormous pressure per acre, we have ample force at hand to drive every industry along our coasts. The whole coast from Newfoundland to the Carolinas is indented by numerous land-locked inlets or bays of a few hundred or a few thousand acres, as the case may be, into which the tidal wave runs, and were it then confined, and released gradual-

ly, enough power might be created and transmitted to drive our numerous factories, in fact do all the work now performed by both gas and steam. The most plausible plan yet suggested to my mind for the accomplishment of this end is to build locks across the mouth of the bay or inlet so arranged as to be opened by the inrolling tide or by attendants, and when the wave is highest the gates to be closed so as to confine the water in the basin. After this task has been accomplished little remains to be done, it being sufficient to let the water escape to the open sea through a canal in which water wheels are located. The water wheels or turbines may be used to drive huge dynamo machines, the electricity from which may be stored in accumulators for future use or conveyed over a wire direct to electro motors situated miles away, there to be used for driving huge machinery. In this way electric energy may be created and transmitted at a cost below that of steam power, and in a far more convenient form, since the cost of the plant would be much cheaper, the first cost being the principal item; and there being no consumption of fuel the wear and tear of machinery is the only expenditure that need be taken into account, while even this will be small if everything has been substantially constructed. It is useless to carry explanations farther; sufficient has been said to show the plausibility of the plan as well as to justify the most sanguine expectations of our electricians, who hold that the near future will see our electric motors taking the place of the more expensive and dangerous steam motors.

Castleton, Ind., Feb. 13, 1883.

### Preservation of Railroad Ties.

SOME interesting data are published showing the relative value of different methods of injecting railroad ties. On the route from Hanover and Cologne to Minden, for example, the pine ties injected with chloride of zinc required a renewal of 21 per cent after a lapse of twenty-one years; beach ties injected with creosote required a renewal of 46 per cent after twenty-two years' wear; oak ties injected with chloride of zinc required renewal to the extent of about 21 per cent after seventeen years; while the same kind of ties not injected necessitated fully 40 per cent of renewals. The conditions in all these cases were very favorable for reliable tests, and the road bed was good, permitting of easy desiccation; the unrenewed ties showed, on cutting, that they were in condition of perfect health. On another road, where the oak ties were not injected, as large a proportion as 74.48 per cent had to be renewed after 12 years; the same description of ties injected with chloride of zinc required only 3.29 per cent renewals after seven years, while similar ties injected with creosote involved, after six years, but 0.09 per cent.

JUSTICE DUFFY has decided "that ladies ought to carry their pocketbooks in their inside pockets and not in their hands, as it tends to tempt scoundrels to crime," and that "if they don't have inside pockets, they ought to have them."

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THE UNRIVALLED PRODUCTION OF THE E. M. BOYNTON SAW AND FILE COMPANY—THE RECENT RE-ORGANIZATION.

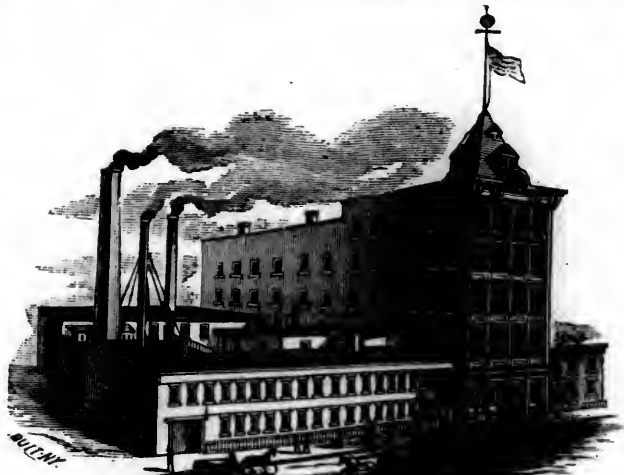
For a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. BOYNTON, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" saw, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion; the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth,

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The First Award of Australia has been added to the Centennial Awards.

The 12-inch log at bottom of this picture was sawed off by two men by hand in 7 seconds before Commissioners of every country and the Emperor of Brazil.

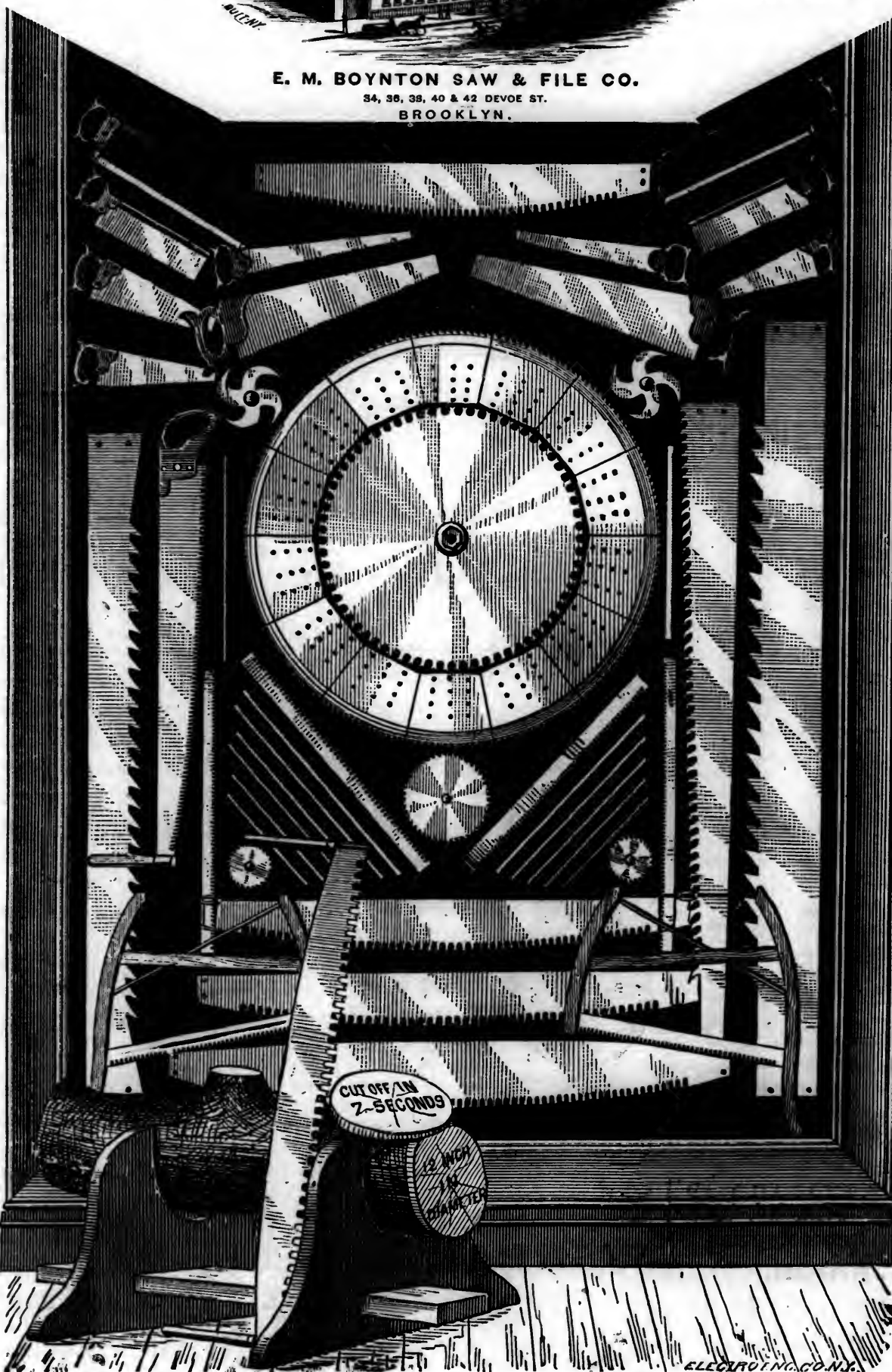


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This Company also manufactures the **Noon-Day Stove Polish**, so rapidly coming into favor.



# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 8.]

NEW YORK, FEBRUARY 24, 1883.

[WHOLE No. 2,443.—VOL. LVI.]

## AMERICAN RAILROAD JOURNAL.

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matters generally, Mining, Banking, Finance and Manu-  
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We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing us with  
any items of news which may come to their knowledge,  
and are of a suitable nature for our columns. It is our  
intention to publish weekly full and accurate informa-  
tion regarding those enterprises and industries to which  
the AMERICAN RAILROAD JOURNAL is devoted, and to  
effect this end we solicit the co-operation of readers in-  
terested therein. We aim specially to record all new  
railway enterprises in the United States and Canada,  
and to note the progress of construction on all new roads  
and extensions; and we request those concerned in rail-  
way building to give us early information concerning  
the above, that our reports may be as complete as pos-  
sible.

Correspondence and contributed articles are also re-  
quested for our special departments devoted to Finance,  
Commerce, Street Railways, and New Inventions. All  
communications should bear the name and address of  
the writer, not necessarily for publication, but to insure  
the editor's attention.

### A BENEFICIAL CHANGE.

WITH this number we make a radical  
change in the general "make up" of  
the AMERICAN RAILROAD JOURNAL, and the sys-  
tem now adopted will be adhered to in the fu-  
ture as closely as circumstances will permit.

Our first step toward marked improvement  
appears in the addition of four full pages to  
the publication, which gives it a total of thirty-  
two pages weekly. It is our intention to make  
another increase of four pages at an early  
date in order to enlarge still further the volume  
of our reading matter, and to accommodate the  
increasing number of our advertisers. Under  
no circumstances will we allow advertisements  
to encroach upon the space allotted to editorial  
and miscellaneous subjects, as we deem it our  
first duty to consider the interests of our read-  
ers.

The first pages of the JOURNAL will be devoted  
to Railroads, Steam Navigation, Manufactures,  
Machinery and Mining, commencing with the  
editorial department. Every issue will contain  
several leaders on these general topics, together  
with a number of editorial notes, which we hope  
to make a valuable feature of the publication.  
Following the editorials, we will regularly pub-  
lish our weekly correspondence, commencing  
with "Our Canada Letter." Items of news  
relative to the above topics will follow the cor-  
respondence, including the notes of Organiza-  
tion, Incorporation, Construction and Consolida-  
tion, which have hitherto been published on  
the first page; and the department will con-  
clude with the statements of Railroad Earnings  
and Railroad and Canal Dividends.

The pages immediately succeeding we shall  
devote to our Financial and Commercial De-  
partments, both of which will be conducted  
with care and energy. These departments  
will contain editorial leaders and notes on  
appropriate subjects, Financial, and Commer-  
cial News, weekly reports of the New York,

Boston, Philadelphia, Baltimore and London  
stock exchanges, commercial statements and re-  
ports, and information of a useful character to  
business men. It is also our intention to or-  
ganize an Insurance Department at an early  
date, recognising the importance of that branch  
of finance, and the need of its consideration  
in a business periodical such as the AMERICAN  
RAILROAD JOURNAL. This department we trust  
to make a special feature, conducting it for the  
mutual benefit of insurance companies and  
their policy holders. It will be under the edi-  
torial charge of a specialist who has contributed  
largely to the insurance press of this city.

The pages in the center of each issue will be  
devoted to general reading matter appertaining  
to the topics on which the AMERICAN RAILROAD  
JOURNAL treats. This matter will be compiled  
and selected with care, with a view solely to  
the interest of our readers.

Following the pages devoted to general read-  
ing, our Street Railway Department will be  
given space, and conducted vigorously in the  
interests of Street Railways and Stage Lines.  
In this department, which we commenced last  
week we have already outlined our intentions  
relative to its conduct, and no further mention  
of it is necessary here.

The last pages of the JOURNAL will be occu-  
pied by the Department of New Inventions,  
which has already been in successful operation  
for some weeks. Its aims and objects can be  
ascertained by reading the note at the head of  
its first column, and also by an inspection of  
its contents.

We make a further change, and devote a  
considerable space in and after each depart-  
ment to those advertisements appropriate to  
the topics discussed on the same or immediately  
preceding pages. By this means the advertiser  
has his announcements placed in that portion  
of the JOURNAL devoted to subjects *sui generis*,  
thus insuring instant attention.

These changes have not been made without



considerable trouble, but the latter has been cheerfully taken in the wish to benefit both our readers and advertisers. Each of the former will be enabled to turn in a moment to those topics which are to him of special interest, without reading matter that he can as well examine at his leisure or to which he need give but cursory attention, while the latter, our advertisers, will be assured a more thorough and valuable inspection of their advertisements. In addition to these changes we have increased our editorial corps, and trust that in its new and enlarged form and with its improved facilities, the AMERICAN RAILROAD JOURNAL may look for new and continued favor from its patrons.

### RAILROAD WARS AND TRUCES.

**A**DVERSITY makes strange bed-fellows." So goes the proverb. This is true of railroad companies as of other people. A pinch of hard times and the losses entailed by the Ohio river floods have sent a thrill of fraternity through the boards of directors lately, and at once they lower their arms, abandon their menacing fronts, and become conciliatory. "Sweet are the uses of adversity." Several such railroad disputes are now in process of settlement. Managers, who were before intent upon nothing but war upon their rivals, have suddenly become convinced that they can do better than fight.

Among those which may be mentioned is the controversy between the Wabash, St. Louis and Pacific, and the Chicago, Burlington and Quincy Railroad Companies, as to the use of the Hannibal and St. Joseph Railroad. Hitherto the Wabash managers, Messrs. Gould, Dillon and Sage, having bought a controlling interest in the Hannibal and St. Joseph from Mr. Duff, of Boston, have threatened to build an extension of it from Quincy to Chicago, a distance of 180 to 200 miles, which would closely parallel the Burlington road. Efforts have been made during the past week to hit upon some arrangement for a joint use and occupancy of the track of the latter; and although at present there seems to be a hitch in the negotiation, there is no doubt that an amicable understanding will, in time, be reached.

Another such dispute between the Union Pacific and the Northern Pacific has just been settled. These two companies have built roads into Montana and Idaho which compete for the same business. The Union Pacific controls a narrow gauge road from Salt Lake some 500 miles north to Butte City and Helena. It has been agreed that for a certain portion of the trade third rails shall be laid over both roads, so as to admit the cars of both companies on terms of equality to such competing points.

A notable feature of this compact is that the Union Pacific "Oregon Short Line," which was to have been extended to Baker City, is to terminate at Snake River; that portion west of Snake River to be built by the Oregon Navigation Company. There is a presumption that the Union Pacific Company are glad to let go of as much as they can of that over-ambitious undertaking. If it had not been begun it probably would not now be started.

An important consolidation of the roads extending from Buffalo to the oil regions of Pennsylvania, and from Rochester to the coal fields of Western Pennsylvania, some 600 miles in all, has been effected under the title of the Buffalo, New York and Philadelphia Railroad Company. These roads have been paying properties from local business heretofore, but are now to be further enriched by a contribution of through business. The New York, Lackawanna and Western is to use the Rochester wing for its Rochester entrance, and is to construct a short link so as to reach the Southwestern part of the system near Salamanca; and it is quite feasible that an extension of the road may one day be made from the neighborhood of Oil City to Mansfield or Toledo. The Rochester and Pittsburgh Railroad, which has been a rival in the same field, is said to be injuriously affected by this unification of interests.

Contests between the Philadelphia and Reading and the Pennsylvania Railroad Companies continue without abatement; the Reading Company threatening to build an extension from Harrisburg to Pittsburgh, and the Pennsylvania threatening to build a branch line to Phoenixville and Reading. The Reading Company has just been relieved by the Court from the custody of the Receivers. If the effort to raise money upon a Car Trust is successful the Reading may become a very formidable antagonist, not only in the coal field but in regard to its main line connections to Pittsburgh and the Southwest.

In the Southwest, what little opposition and friction there may have been between the Missouri Pacific system and the Texas Central system and the Gulf, Colorado and Santa Fe, is likely to be diminished, or altogether removed, by the control of the former passing into the hands of the Southern Pacific syndicate. The purchase of the securities held by the Morgan estate gives the Southern Pacific the desired entrance and terminal privileges at New Orleans, and also carries with it the control of about 700 miles of road spread over the State of Texas, which must hereafter feed the Texas and New Orleans line. The St. Louis and San Francisco Railroad being owned in common,

and worked in harmony by the owners of the Missouri Pacific and Southern Pacific systems respectively, there is reason to suppose that those two great systems will extend the same harmony over their entire network of roads between the Mississippi River at St. Louis and New Orleans, and the Rio Grande at Laredo and El Paso.

### SUBMARINE NAVIGATION.

**I**T is singular that with the almost universal study of the problems of cheap and rapid transportation, so little attention has been paid to the subject of submarine navigation. The possibilities and probabilities resulting from investigation and experiment in this branch of mechanical science are wonderfully numerous, yet the inventor's mind and the capitalist's pocket are rarely opened in its cause.

Hitherto, all efforts in the direction of submarine navigation appear to have been made solely with a view to produce an engine of warfare, not a vessel for the peaceful transportation of passengers and merchandise, and in so doing scientists and engineers are following the same instincts that actuated the ancient world and prevail to-day among barbaric tribes. So far as history teaches all navigation originated in the interests of warfare, and was first utilized as a means for the transportation of armies. We presume the old *triremes* of Roman days, and the still earlier vessels of Egypt and Assyria were built for warlike purposes, for the ancients were perpetually at war, and would no doubt have scorned to take so much pains and labor to devise vessels for the secondary purposes of travel and commerce. The *proas* of the South Sea Islanders were designed for the warlike invasion of neighboring islands, and their use in times of peace came afterward as a subsidiary purpose or adaptation. Inventors of submarine vessels in the present day seem to aim no higher than the ancients and savages, and are comparatively satisfied when they can devise a new form of torpedo or submarine ram, and put it into practicable shape.

Times have changed, and in these days of civilization, warfare plays a much inferior part to trade and commerce in the life of nations, but this fact seems to be forgotten by those who seek to achieve new discoveries in submarine navigation. It is a pity they cannot curb their warlike propensities and devote their time and ability to devise submarine vessels whose mission shall be loftier than the slaughter of mankind. In America, where research and investigation may always look for sympathy from capital, wonders might be achieved in this di-

rection by the exercise of science and determination.

The problem of submarine navigation has nothing *impossible* about it. The marvelous results of scientific and chemical research and the development of electricity, render that possible which a century ago would seem fabulously beyond the reach of human attainment. Air can be manufactured, and the lungs given their food when the natural atmosphere is no longer within reach; men may walk on the bed of the ocean and observe the wonders of the deep as leisurely as a naturalist may pursue his calling in a field or garden; vessels can be made to float and brave the fiercest storms, while constructed wholly of iron. Electricity in itself furnishes power, light and heat, and the difficulties in the way of submarine navigation appear to be simply those of *application* not the lack of proper principles and methods.

Much curiosity was evinced some years ago by the publication of Jules Verne's imaginative tale "Twenty Thousand Leagues Under the Sea," and the vividly drawn story was widely read. Unfortunately it was stamped with the brand of fiction, and consequently the really scientific nature of the work was overlooked, but his description of Captain Nemo's wonderful submarine vessel, the "Nautilus," does not in a single instance overstep the bounds of possibility. Its construction is a feasible accomplishment, and would not call for a greater outlay of capital than did the building of many of our ships of war. Why has not some scientist turned his attention to the construction of a submarine vessel for transportation? Why has not some millionaire satiated with the excitements and pleasures of adventure devoted a portion of his wealth to the construction of a submarine yacht? There may be answers to these questions, but we doubt if they are sensible or possess a satisfying reason.

Man has been very ingenious and progressive in devising means of travel on the surface of the land and seas, but not above or below them and there are pinnacles of fame still awaiting occupancy by discoverers of practicable means of aerial and submarine locomotion. The former may demand the knowledge of hitherto unknown and possibly, non-existing principles, but the latter does not, and when submarine navigation is an accomplished fact, the universal comment may be expected, "Why was it not done before?"

### STEAM TELEGRAPHY.

A CORRESPONDENT of the New York *Herald* suggests the employment of the Morse telegraphic alphabet, as the basis of a

system of steam signals for ocean navigation. His plan is to use the dash and the dot as employed by telegraphic operators, a long whistle representing the dash, and a short whistle the dot. He reasons as follows:—

"Two expert telegraph operators can take opposite locomotives and talk to each other with the greatest ease, and I don't see why sea captains should not be able to do the same thing. Out in the West, some years ago, a frame bridge broke down over a great river, and from shore to shore there was no means of communication. Well, somebody thought of getting two telegraph experts together. One mounted a locomotive on one side of the river; the other took charge of a locomotive on the opposite bank. By working the steam valve and putting the whistle in play they managed to send messages to each other, and the bridge was speedily reconstructed, mainly through this ingenious application of the locomotive whistle. I've got another idea. Why shouldn't people at sea when they are visible to each other in clear weather talk to each other by streaks of steam in circumstances where the sound of a whistle could not reach? A short puff of steam would be equivalent to a dot in the Morse system, and a long streak would be equivalent to a dash. By using the steam jets on a fixed scientific principle, two captains watching each other through binoculars from a long distance could communicate with each other easily."

There is much in this ingenious suggestion to commend it to the attention of navigators. Its simplicity and ready acquirement are strong points in its favor, and the extent of communication between vessels which its use would permit, should greatly mitigate the chances of collision in foggy weather. At present vessels in close proximity during a fog are as restricted in their means of communication as a hand organ is in its musical selections. A few leading signals may be conveyed, but there is no system in existence by which the officers of two vessels may hold general sign converse with each other.

### EDITORIAL NOTES.

WE must urge the forbearance of our readers regarding our tardiness in issuing the present number of the AMERICAN RAILROAD JOURNAL. The increase in its pages and the general remodelling of its interior form caused delays that were unavoidable. The additional fact of the occurrence of a legal holiday on February 22d, still further retarded our progress. We feel convinced that our excuses are amply sufficient and that the improved appearance of the JOURNAL will compensate for the delay, for, be it remembered, an improvement takes time to effect. Changes made hastily are no improvement, at all, and betray a lack of stability and permanence. Hereafter the AMERICAN RAILROAD JOURNAL will appear

"on time," thus setting an excellent example to those organizations whose interests it represents. It was our desire to present this number complete in every respect, but unfortunately "Our Canadian Letter" arrived too late for insertion, frustrating our intentions to a limited extent.

WE have received, this week, Section III of "KNIGHT'S New Mechanical Dictionary of Tools, Instruments, Machines, Processes and Engineering," published by Houghton, Mifflin & Co., of Boston. Like the preceding sections the volume is conspicuous for the care taken in the collection of subjects and detail of description. It continues in the alphabetical system commencing with *Hydraulicking* and terminating with *Printing Presses*, covering in all 240 pages, and illustrated with several hundred wood engravings. The death of its author, Edward H. Knight, A.M., LL.D., on January 22, was a severe loss to the field of mechanical and scientific literature in which he has ably figured for many years, and it is gratifying to learn from the publishers that the manuscript of the present work was completed before his death, and that the delay in issuing the remaining sections will be of a few weeks only, caused by the necessity of reading the proof-sheets without his assistance. Section III is bound in paper, 4to size and is sold by the publishers for \$2.00.

THE bill reducing the fare on the elevated railroads in this city to five cents has been passed by the New York legislature and now awaits Governor Cleveland's signature. The Governor has listened to a number of arguments submitted by both the supporters and opponents of the measure, and he has until next Friday in which to reach a decision. It is considered probable that he will approve the bill.

OUR table of contents, formerly printed at the foot of the first editorial column, has been transferred to the first page of the cover. The departments are first indexed, followed by the captions of their leading topics, and this arrangement will enable readers to ascertain the contents of the JOURNAL without purchasing a copy. We call their attention to this generous act of self-sacrifice on our part.

INSURANCE, both life and fire, has made such great advances since our publication was established, that at present it rivals banking in financial importance. We have recognized this fact, and propose in a few weeks, to establish an Insurance Department. It will not be an experiment, but a fixture in our columns.



## CORRESPONDENCE.

[COMMUNICATIONS are solicited for this department on all subjects pertaining to Railroads, Steam Navigation, Machinery and Manufactures. No attention will be paid to communications unless the name and address of the writer is furnished us, though if desired, they will be withheld from publication. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to this department of the AMERICAN RAILROAD JOURNAL.]

## Defective Vision Again—A Reply to Dr. Herrick.

EDITOR AMERICAN RAILROAD JOURNAL.

THE aim in all discussions should be to arrive at facts, otherwise any conclusions that may be reached are liable to be "warped" and altogether unprofitable. A strict adherence to truth and honest conviction is the shortest way out of a discussion which may be made tortuous and disagreeable by a trifling evasion of the former, and a persistent refusal to be convinced. It frequently happens that a person's statement does not properly convey his ideas, and there is a misunderstanding and an accusation of false statements which often bring out unpleasant remarks that injure rather than strengthen an argument.

The foregoing has been brought to mind by an effort to *strengthen* the "weak points" which Dr. Herrick claims to have discovered in my article of December 30, on "Color-Blindness." The Doctor is apprehensive that many might be misled by the article in question, which, he says, contains several erroneous statements and conclusions. The first "erroneous statement" that attracts his attention is that experts are asking Congress for an appropriation to pay them for professional services. My authority for this is the statement of a gentleman who is a "laborer in the vineyard," and knows whereof he speaks. My informant states that Congress was asked for an appropriation for the investigation of color-blindness, at its last session, and soon after its adjournment, I received a published speech on the subject by a member whose name I do not recollect, and the pamphlet containing it has been mislaid.

With these facts in view it may be safely inferred that "plums" are a consideration, although it does not follow that Congress would not do a good thing by appropriating a reasonable sum for a thorough investigation of the subject, and it is proper that those who shake the tree should get the plums. Then the Doctor attacks several of what he characterizes as weak points, but, as he does not dissent from the view therein expressed in any essential point, his criticisms, which are of an exceedingly mild type, will be passed over. But further along he says I am fearful lest some expert himself might be afflicted with defective vision, which would make a bad matter worse. I did advance such an idea, and since it was written the following has occurred and is widely published, which will strengthen my position somewhat:—

"The following incident is a fair illustration

of the reliability of 'color-blind' experts, and is also suggestive that precautions in this respect may sometimes be carried to an excess that is not creditable to the general management of roads nor just to employes. A locomotive engineer on a certain prominent road, upon which color-blind regulations had been some time in force, was formally examined by the official ophthalmologist and pronounced incapable in consequence of defective vision. The engineer was, of course, discharged from service. Not long afterwards he rigged himself up as a rustic farm laborer and presented himself at the city office of the expert, saying that something was the matter with his eyes and requesting to be examined. The oculist, of course, did not recognize him, and after a careful examination gave him a certificate that his vision and capacity of discriminating colors were perfectly normal. The engineer, it is now said, stands a fair chance of being reinstated."

It thus appears that I had sufficient grounds on which to base my fears that great injustice would be done to a very worthy class of men, and that life and property would be endangered by the very means adopted to promote safety. I have stated repeatedly that it is important that a close watch should be kept for defective vision in operatives, and none but those who are *reliable* kept in service in any capacity that requires perfect vision for safety. I take the ground that nothing should remain undone for the safety of life and property, but our labors in that direction should be governed by reason and not run into useless tinkering. Overdoing even a good thing spoils it, and when a man passes an examination showing him to be capable of performing the duties we ask of him, I cannot see the justice or propriety in requiring him to be especially sharp in matters in no way connected with his duties. However, let us hope the experts will give us the real benefit of their knowledge on the subject, and get well paid for it.

WM. S. HUNTINGTON.

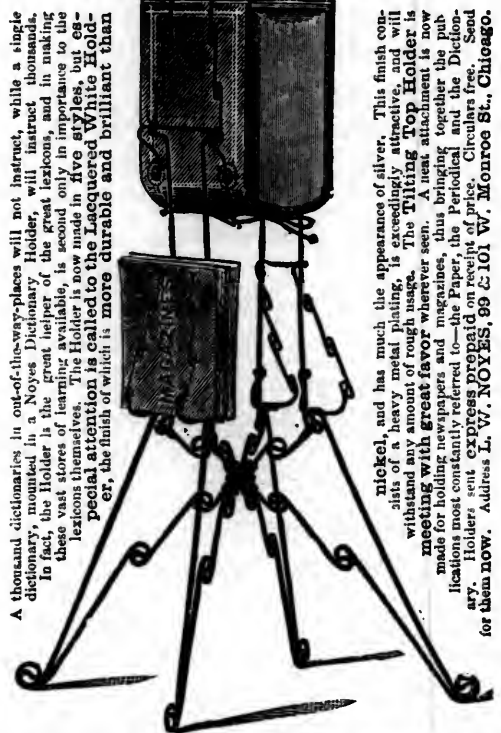
RAILROAD engines are now provided with a hose and pump to throw water on burning cars, but when a train has jumped the track the engineer is too busy digging himself out of the debris to think of experimenting with the apparatus.

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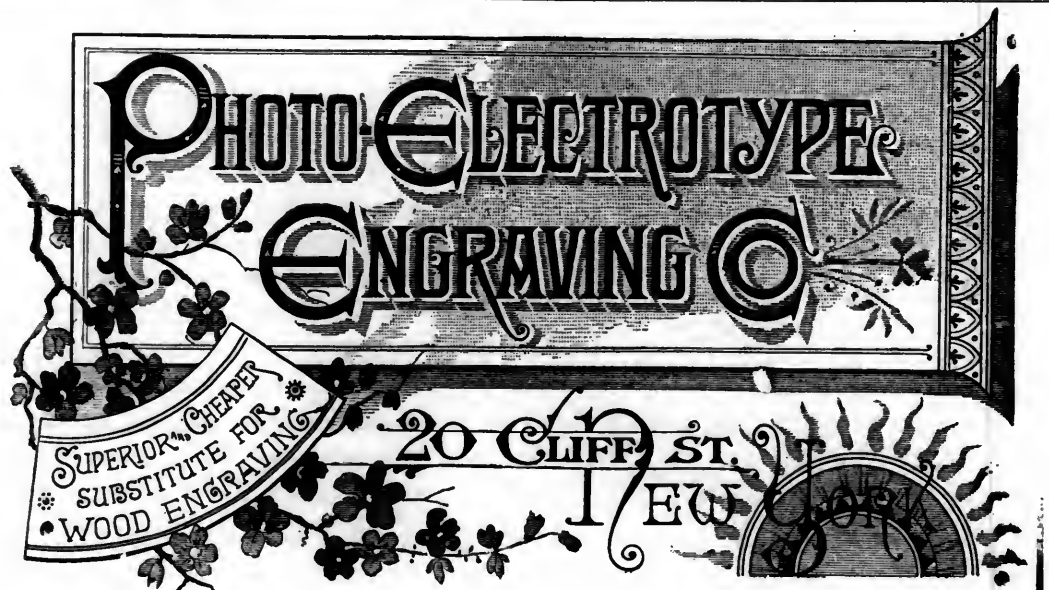
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## WEEKLY NEWS ITEMS.

[Items of information suitable for this department and especially those adapted for the columns devoted to the Organization, Incorporation, Construction and Consolidation of Railways, are earnestly desired from our readers.]

## Incorporation.

ARTICLES of incorporation of the Bank of Banks was filed on the 17th inst. in the office of the County Clerk of New York county. The first directors and trustees are Elliot F. Shepard, Augustus D. Shepard, L. C. Whitton and William L. Skedmore. The capital stock is to be \$100,000, with the privilege of increasing it to \$1,000,000.

A CERTIFICATE of incorporation of the Staten Island Terminal Railroad Company was filed at Albany on the 13th inst. The capital is \$1,000,000. The road is to run from New York Bay, near the village of Edgewater, and thence by the most feasible and direct route through the town of Southfield to the State Line in Arthur's Kull, at or near the place known as Rossville. The length of the road will be ten miles; capital, \$50,000.

A CHARTER was granted at Harrisburg, Penn., on the 14th inst., for the merger and consolidation of the Buffalo, New York and Philadelphia Railway Company, the Olean and Salamanca Railroad Company, the Oil City and Chicago Railroad Company, and the Buffalo, Pittsburgh and Western Railroad Company, with a capital stock of \$20,350,000. The name of the new corporation is the Buffalo, New York and Philadelphia Railroad Company, with offices at Philadelphia. A certificate of consolidation of the above roads was also filed on the 14th inst., with the Secretary of State at Albany, N. Y.

## Organization.

THE officers of the Kingston and Pembroke Railway Company, elected at the annual meeting held at Kingston, Canada, on the 14th inst., are: C. F. Gildersleeve, president; J. R. Flower, vice-president, and G. Osborne, secretary-treasurer.

THE annual election for directors of the Boston and Albany Railroad Company held in Boston on the 14th inst., resulted in the choice of the following board: William Bliss of Boston, Henry Colt of Pittsfield, George O. Crocker of New Bedford, John Cummings of Woburn, Ed-

THE managers of the Schuylkill Navigation Company for the ensuing year are: Frederick Fraley, John N. Hutchinson, Charles W. Wharton, George Brooke, Charles Baber, Michael Ward, Thomas R. Patton. The officers are: President, Frederick Fraley; treasurer and secretary, Richard Wilkins.

THE directors of the Summit Branch Railroad Company elected on the 13th inst., are: George B. Roberts, A. J. Cassatt, Edmund Smith, Strickland Kneass, Wistar Morris, N. P. Shortridge, J. N. DuBarry, John P. Green, James W. Johnson, Edwin P. Wooster and Isaac J. Wistar.

THE directors of the Pennsylvania Canal Company, elected on the 13th inst., are: Isaac

J. Wistar, George B. Roberts, A. J. Cassatt, Strickland Kneass, Wistar Morris, William J. Howard, Edmund Smith, M. Hall Stanton, Alexander Biddle, S. M. Felten, Simon Gratz and John P. Green.

At the annual meeting of the Boston Lead Company, held in Boston on the 12th inst., the following directors were elected: William P. Hunt, Charles M. Clapp, Jacob Pfaff, Phineas B. Smith, Jr., William G. Thacher, Thomas F. Temple. President, Samuel Little; treasurer, Wm. J. Bride. The annual statement showed a prosperous year's business and a large increase over previous years.

ward L. Davis of Worcester, Jarvis N. Dunham of Pittsfield, Edward B. Gillett of Westfield, Moses Kimball of Brookline, John C. Phillips of Boston, Jacob C. Rogers of Peabody, James A. Rumrill of Springfield, Charles S. Sargent of Brookline, Mahlon D. Spaulding of Boston. At a subsequent meeting of the directors William Bliss was re-elected president; James A. Rumrill, vice-president; Charles E. Stevens, treasurer; and William A. Rumrill, clerk.

At the annual meeting of the Old Dominion Steamship Company, held in this city on the 13th inst., the following directors were elected: N. L. McCready, John M. Robinson, Isaac Bell, George F. Tyler, C. P. Huntington, John Bodine, C. P. Ficher, C. C. Stockley and Jacob Moore. The old officers, consisting of N. L. McCready, president; John M. Robinson, vice-president; Isaac Bell, president, pro tem., and W. H. Stanford, secretary, were re-elected. This company co-operates with the Seaboard and Roanoke, Norfolk and Western and Chesapeake and Ohio railroads, which are supposed to have a controlling interest of the stock.

At a meeting of the stockholders of the Louisville, New Albany and St. Louis Railway Company, held at Mt. Carmel, Ind., on the 14th inst., the following directors were elected, the board being increased four members to give the Louisville and Evansville representation: W. T. Hart, Isaac T. Burr, Jonas H. French, James H. French, James H. Wilson, C. N. Nutt, F. B. Taylor, John Goldthwait and F. B. White, of Boston; Colonel Bennett H. Young, Arthur Cary, C. Brockenbrough, St. John Boyle, of Louisville; William Heitman, Samuel Bayard, R. K. Dunkerson, of Evansville; Morris McDonald, New Albany, and Bluford Wilson, Springfield, Ill.

THE directors of the recently consolidated Buffalo, New York and Philadelphia Railroad Company—composed of the Buffalo, Pittsburgh and Western, the Olean and Salamanca, the Oil City and Chicago and the Buffalo, New York and Philadelphia—are: John W. Jones, C. H. Clark, E. A. Rollins, B. K. Jamison, of Philadelphia; E. F. Winslow, Bryce Gray, I. N. Seligman, A. N. Martin, C. H. Allen, E. L. Owen, of New York City; P. P. Pratt, E. P. Beals, B. C. Rumsey, of Buffalo, N. Y. Officers—President, J. W. Jones; first vice-president, C. H. Allen; second vice-president, A. N. Martin; secretary, J. R. Trimble, Camden, N. J.; treasurer, F. S. Buell, Buffalo, N. Y.

At the annual meeting of the stockholders of the Louisville, New Albany and Chicago Railroad Company, held on the 13th inst., the fol-

lowing board of directors was elected: John J. Astor, Robert L. Kennedy, Samuel Sloan, R. G. Rolston, E. H. Green, William Wheelright, and J. A. Garguilo, of New York, and E. D. Standiford, R. S. Veech, J. Caldwell, H. V. Newcomb, R. R. Hill and Bennett H. Young, of Louisville. At a meeting of the directors held on the 14th inst., the following officers were chosen: President, Bennett H. Young; first vice-president, R. G. Rolston; second vice-president, E. B. Stahlman; executive committee, Bennett H. Young, R. G. Rolston and Samuel Sloan.

THE officers of the Ontario Pacific Railway Company, elected at a meeting of the directors held at Cornwall, Ontario, on the 14th inst., are: D. Bergin, M. P., president and managing director; Joseph Kerr, M. P. P., vice-president, D. A. Flack, secretary and treasurer; J. L. P. O'Hanly, C. E., chief engineer; John Bergin, solicitor. The Ontario Pacific Railway starts from Cornwall, touching at Harrison's Corners, Newington, South Finch, Berwick and Crysler, to Ottawa, thence by Arnprior and Ingersoll, to French River, with branches from the main line at Newington, via West Winchester, to Perth and Carleton Place, and from Eganville to Pembroke. Of the capital stock, \$300,000 has been subscribed and ten per cent deposited in the Ontario Bank.

## Construction.

FIFTEEN miles of the Vicksburg, Shreveport, and Pacific Railroad will be completed the 1st of April.

THE rails on the new track of the Pennsylvania Railroad north of Lancaster, Penn., have all been laid.

FIVE additional kilometres have been completed on the Gulf end of the Tehuantepec Railway, making a total of forty-five kilometres constructed.

THE President has accepted a section of twenty-five miles of the Northern Pacific Railroad in Montana coming eastward, and ending 325 miles from Wallula Junction, Washington Territory.

THE Toledo and Indianapolis Railroad has been completed to Findley, Ohio, forty-five miles southward from the starting point at Toledo. At Findley connection is made with the Indiana, Bloomington and Western Railroad.

ACTIVE track-laying is being performed on the New Orleans and Mississippi Valley Railroad north of Kenner, and there are at present enough of steel rails on hand to complete the line to College Point, a distance of forty miles from the city.

THE Pennsylvania Railroad Company is surveying a line from Ardmore to a point on the Philadelphia, Wilmington and Baltimore, above the mouth of the Schuylkill River. The purpose of this link is to relieve the main line of the pressure of freight.

THE work on the Lake Borgne Railroad, from New Orleans to Proctorville, was commenced at Green's Creedmoor place, in Terre-aux-Bœuffs, on the 15th inst., and will be commenced at the lower line of the city about the 25th inst. By the last of the month grading



will be pushed from four different points on the line.

THE people of Natchez, Miss., are just beginning to realize that the New Orleans and Mississippi Valley Railroad will not pass by their city, and have placed two engineers in the field to survey a line from Natchez to Port Gibson, which, when completed, will be forwarded to R. T. Wilson, the president of the company, at New York.

THE contract of Rogers & Ballentine on the Natchez, Red River and Texas Railroad to Trinity is completed, with the exception of a small amount of work to be done at the approach of several bridges. Track-laying is being pushed as rapidly as possible and has reached a point eighteen miles west of Vidalia, and almost in sight of Trinity.

A SPECIAL to the New Orleans *Times-Democrat* from Waco, Texas, says that the Texas and St. Louis Narrow-Gauge Railroad will be completed through to Cairo and St. Louis by the 1st of April and be ready to compete for through business for all points North and East. It is believed that as soon as this road is opened through to St. Louis, its western end will be pushed from Gatesville to the Rio Grande, there connecting with the Mexican system.

THE work of construction on the Kingston and Pembroke Railway north of the Mississippi River, has been prosecuted during the past year. The line was opened for traffic to the Clyde River in December last, and will be opened to the Madawaska River during the ensuing summer. The Government bonus for the second section of ten miles of completed railway north of the Mississippi River has been received. During the year 1882, the company spent \$900,000 on construction and repairs.

G. CLINTON GARDNER, general manager of the Mexican National Railway, was interviewed while in Galveston, Texas, on the 14th inst., and is reported to have said that the northern portion of the line was completed to Garsia, thirty-two miles beyond Monterey, and that the national government of Mexico has extended the time for the completion of the railway in Mexico for ten years, provided the railway company would agree to build 500 kilometres each and every year until their lines were completed.

THE contracts for the graduation and masonry of the new line of the Pennsylvania Railroad Company as far as Pottstown have been let, the agreement requiring the work to be finished by October 1. The route selected is very direct, with little curvature and light grades. At Phoenixville this road will connect with the Phoenixville and Westchester branch of the Pennsylvania Railroad via Frazer Station on the main line. The contracts have been let in several sections, the first five miles, including the tunnel at Phoenixville, being awarded to Charles McFadden, of Philadelphia, and John Kelly, and the other sections to Demthorne & March, of Phoenixville, Kelly & Bush, of Lancaster, and Mr. McCall, of Reading. The section from Philadelphia to Phoenixville, where connection is made with the West Chester branch, will probably be opened in the fall. This will form a belt line from Philadelphia to West Chester and Phoenixville via the Schuylkill valley branch to Phoenixville, thence across to West Chester via Frazer Station, and back to Philadelphia by the West Chester and Media branch.

### Rhode Island Railroads.

HENRY STAPLES, Railroad Commissioner of Rhode Island, in the annual report which he has just submitted to the General Assembly, expresses the regret that there was no new road constructed last year. The Rhode Island and Massachusetts and the Providence, Warren and Bristol companies should be brought to the Union Station in Providence, and the Providence and Springfield road should be extended far beyond its present terminal at Pascoag. It is also unfortunate that another year has passed without seeing the work actually begun for improved terminal facilities in Providence. The whole number of corporations having lines in the State, including the Union (street) Railroad of Providence, is 18; total mileage, 282,425; total receipts, \$12,494,124.28; expenses, \$10,937,936.14; net earnings, \$1,525,221.04; total surplus net, \$2,726,843.50; passengers carried, 29,835,019; tons of freight carried, 5,249,792½. The aggregate of the year's business, as compared with that of the previous year, shows a net increase in the receipts of \$1,406,122.62, but to obtain this, with the ordinary and extraordinary expenditures, the expenses were increased \$1,435,962.62, and the net earnings actually decreased \$246,722.56. Only six corporations show a gain in earnings. The Commissioner refers at length to the fact that car loads of flour are often shipped from certain localities in the West to Boston at a much less rate than to Providence, the mileage being about the same, and suggests that if Rhode Island flour merchants wish the illegality of this established they bring a test suit in the United States courts.

### Illinois Central Railroad Company.

THE earnings of the Illinois Central Railroad Company (estimated) for the month of January, 1883, were as follows:—

	In Illinois 919 miles.	In Iowa 402 miles.	Southern Div. 578 3.10 miles.	Total, 1899 3.10 miles.
Freight.....	\$315,920	\$78,420	\$335,360	\$729,700
Passengers.....	116,252	35,328	56,050	207,630
Miscellaneous...	99,090	6,200	16,000	121,290
Total.....	\$531,262	\$119,948	\$407,410	\$1,058,620
Jan. '82, actual..	588,261	158,483	272,708	1,019,453

### LAND DEPARTMENT.

3,885 26-100 acres sold during Jan., 1883, for.. \$17,547 92  
Collections month of January, 1883..... 16,940 04

L. A. CATLIN, Secretary.

NOTE.—The regular semi-annual dividend of three and one-half per cent; also, an extra dividend of one-half of one per cent from the earnings of the Southern division for the six months ending December 31, 1882, will be paid March 1.

### Paper Car Wheels.

THE following items, extracted from the report of President Darwin to the stockholders of the Allen Paper Car Wheel Company, at their annual meeting, February 14, 1883, may interest railway managers, as showing the progress made in introducing, and the favor in which the paper wheel is held.

The receipts of the Company in 1880, the year

of its organization, and the succeeding years, were as follows:—

In 1880.....	\$286,163 72
In 1881.....	593,057 72
In 1882.....	782,353 32

The total number of wheels made to February 1, is about 30,000. Of this number the Company have not learned of a single instance where loss of life to a passenger or employé, or any serious injury to the rolling-stock or road-bed, was caused by the breaking of a paper wheel or an axle used in connection with them. The business of January last was the largest, with one or two exceptions, since the organization of the Company, and the first six days of February of the present year they booked orders for more wheels than for the entire corresponding month of last year. During the last year they have added \$67,695.32 in improvements to their already extensive plants—making their present capacity 30,000 wheels a year.

### General News.

A FORMAL application for the termination of the Philadelphia and Reading receivership was made by counsel for the company to Judge Butler in the United States Circuit Court at Philadelphia on the 14th inst. There was no opposition, and a decree was made by the court ordering the receivers to hand over to the Union Trust Company, as trustee, all the rolling-stock and equipments of the Reading companies, to be held until certain obligations shall be met, when the receivership will be finally discharged. The president stated that the only delay likely to attend the final transfer of the property from the receivers to the company will be such as is required in order to receive the money for the new car trust certificates, and pay with it the outstanding receivers' certificates for about the same amount—\$2,000,000. The whole thing may, it is thought, be settled by the close of this month.

At the annual meeting of the stockholders of the Boston and Albany Railroad Company, held in Boston on the 14th inst., it was voted to ratify the recent issue of bonds and notes, and especially the bonds issued to the Commonwealth of Massachusetts in exchange for the stock of the corporation. It was also voted that Moses Kimball, John Cummings and Charles S. Sargent be appointed to approve and certify all bonds and all notes, payable at periods of more than twelve months from the date thereof, which may hereafter be issued by the road, and that the approval and certificate of either of them should be sufficient.

THE annual report of the Richelieu and Ontario Navigation Company states that the receipts for the season of 1882 were \$504,226 as against \$492,976 for that of 1881, a gain of \$11,250. The disbursements for 1882 were \$418,420 against \$460,293 in 1881. The profits for the year amounted to \$85,806, which with the reserve of last year and the amount received for the steamer "L'Assomption" makes a total of \$112,116. Two semi-annual dividends of 3 per cent or about \$95,340 have been paid out of this, leaving \$26,776 to be carried over to next year.

ANOTHER great bridge is in course of con-

struction across the Missouri River, twenty miles north of Council Bluffs, Iowa. It is for the use of the Sioux City and Pacific Railroad into Nebraska. When completed it will cost nearly \$1,000,000. The piers are iron, the caissons being filled with concrete masonry, and are 110 feet high. The superstructure will be of iron, 1,000 feet long, about one-third less than the Union Pacific Railroad bridge at Council Bluffs. The masonry and piers will all be up by August 1, and the bridge will be ready for use by November next. The peculiarity of the soil and banks of the Missouri River make the problem of engineering one of the most perplexing character, but the success in bridging the stream at Council Bluffs has settled the question of the practicability of another bridge.

THE contract for lighting the New York and Brooklyn Bridge has been awarded to the United States Illuminating Company, which is the local organization of the United States Electric Lighting Company of this city. Bids were made by all the principal electric light companies in the country. Two separate circuits are to be used, which will feed alternate lamps on both sides of the bridge, so that if any accident should happen to one of the engines only the alternate lamps will be extinguished. Seventy powerful arc lights will be distributed on the bridge.

THE Pittsburgh, Cincinnati and St. Louis Railway Company will commence the erection of new shops at Columbus, Ohio, in the spring. The shops will cost about \$537,000, exclusive of tools, and will be equipped for the capacity to turn out fifty locomotives and about 3,000 cars per year, in addition to doing the general repair work for the Western division of the Pittsburgh, Cincinnati and St. Louis, the Little Miami, and the Eastern division of the Columbus, Chicago and Indiana Central roads.

DURING the month of January there arrived in the various customs districts of the United States 16,307 passengers, of whom 12,940 were immigrants, 2,067 citizens of the United States returning from abroad, and 1,300 aliens not intending to remain in this country. The number of immigrants during the seven months ended January 31, 1883, was 283,419; for the same period ended January 31, 1882, the number was 346,846.

A DECREE was entered in the Circuit Court of Richmond on the 16th inst. for the resale of the Washington and Western Railroad, formerly called the Washington and Ohio Railroad. The road was first sold for \$592,000, of which \$50,000 was paid in cash and bonds were given for the remainder. The purchasers failed in the first deferred payment, and now consent to a resale, which takes place in about forty days.

THERE will be four bridges over the Schuylkill River on the line of the route of the Pennsylvania Railroad up the Schuylkill Valley. The first crosses the river at Manayunk; the second at Brooke's farm, east of Pottstown; the third will be above Pottstown, and the fourth a short distance this side of Reading.

## THE COST OF ADVERTISING

For any responsible advertiser, making application in good faith, we prepare and furnish a written estimate, showing the cost of any proposed advertising in the leading Newspapers of the United States and Dominion of Canada.

We prepare and exhibit printed proofs of any proposed advertisements.

For the preparing of estimates no charge is made, and the applicant is placed under no obligation to transact his advertising business through us unless it appears to him that by doing so he will best advance his own interests.

A copy of the advertisement, a list of the papers, the space the advertisement is to occupy and the time it is to appear, should all be given with the application for an estimate of the cost.

When an advertiser does not know what he wants or what he ought to do, he can designate some sum of money within which he wishes to limit his expenditure; this will enable us to prepare for him such a list of papers as will be the best for his purpose, within the limits which he prescribes.

Send 25c. for 100-page pamphlet. Address

### GEO. P. ROWELL & CO.

Newspaper Advertising Bureau,

(Printing House Square,  
Opposite Tribune Building,)

10 Spruce St., New York.

## NEW YORK AND NEW ENGLAND RAILROAD.

The only Line running Pullman Palace cars between

**BOSTON and NEW YORK**

(via Hartford and New Haven).

Express train leaves Boston 8:45 A. M., arrives at New York 4:22 P. M.

## THE NORWICH LINE

—BETWEEN—

**BOSTON AND NEW YORK.**

Steamboat train leaves Boston 6:30 P. M. arrives at New London at 10:00 P. M., connecting with the new steamer **City of Worcester**, Monday, Wednesdays and Fridays, and **City of New York**, Tuesdays, Thursdays and Saturdays. Returning, steamer leaves Pier 40, North River, New York, at 4:30 P. M., connecting at New London with train leaving at 4:05 A. M., arriving in Boston at 8:00 A. M. Good night's rest on the boat.

Ask for Tickets via N. Y. & N. E. R. R.

Office 322 Washington st., Depot foot Summer st., Boston.

M. FELTON, JR.,

Gen'l Manager.

A. C. KENDALL,

Gen'l Pass. Agent.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs**, as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,

General Manager.

J. T. CLARK,

General Sup't.

A. V. H. CARPENTER,

Gen. Pass. and Tick. Agt.

GEO. H. HEAFFORD,

Ass't Gen. Pass. Agt.

## HOUSATONIC RAILROAD.

THE ONLY LINE RUNNING  
THROUGH CARS

Between New York, Great Barrington, Stockbridge, Lenox, and Pittsfield—the far-famed resorts of the

### Berkshire Hills

of Western Massachusetts—the "Switzerland of America."

Two through trains daily between New York City and all points on the Housatonic Railroad, from the Grand Central Depot via the New York, New Haven, and Hartford Railroad at 8:00 A. M. and 3:30 P. M.

Descriptive Guide-Book sent free by mail upon application to the General Ticket Agent.

H. D. AVERILL, Gen'l Ticket Agent.

W. H. YEOMANS, Superintendent.

General Offices Bridgeport, Ct. Dec. 27, 1882.

## "Progressive and Reliable."

"Under its present management,"

## THE ERIE RAILWAY

is become the most progressive and reliable Trunk Line in America."—*Cleveland Leader.*

### THE ERIE

is the **SAFE and COMFORTABLE** Line between the East and West. Its equipment is unsurpassed—**Pullman Coaches, Westinghouse Air-Brake, Miller Safety Platform, Cars Lighted by Gas, Steel Rails, Double Track.**

The scenery along the line includes such great Works of Nature as **Niagara Falls, Watkin's Glen, Portage Falls and Gorge, the Great Lakes** and the **Lakes of Central and Western New York**, making it truly the "LANDSCAPE ROUTE OF AMERICA."

E. S. BOWEN, Gen. Supt., N. Y.

JNO. N. ABBOTT, Gen'l Pass'r. A'gt., N. Y.



ESTABLISHED IN 1836.

## LOBDELL CAR WHEEL COMPANY,

Wilmington, Delaware.

GEORGE G. LOBDELL, *President*,  
WILLIAM W. LOBDELL, *Secretary*,  
P. N. BRENNAN, *Treasurer*.

## SAFETY RAILROAD SWITCHES,

WITH MAIN TRACKS UNBROKEN.

Railroad Crossings, Frogs, and other Railroad Supplies,

MANUFACTURED BY THE

## WHARTON RAILROAD SWITCH CO.,

PHILADELPHIA.

Works: 23d and Washington Avenue.  
Office: 28 South 3d Street.

## THE ROGERS LOCOMOTIVE AND MACHINE WORKS,

Paterson, N. J.

Having extensive facilities, we are now prepared to furnish promptly, of the best and most approved descriptions, either

COAL OR WOOD BURNING  
LOCOMOTIVE ENGINES,  
AND OTHER VARIETIES OF

### Railroad Machinery.

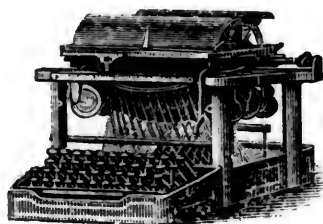
J. S. ROGERS, *Pres't.*  
R. S. HUGHES, *Sec'y.*  
WM. S. HUDSON, *Supt.* } Paterson, N. J.

R. S. HUGHES, *Treasurer*,  
44 Exchange Place, New York.



REMINGTON STANDARD  
Only Rapid and Durable  
WRITING MACHINE  
Used at sight. Phonography practically taught. Situations procured for competent Students. Send for circulars. W. O. WYCKOFF, Itasca, N. Y.

## REMINGTON STANDARD TYPE WRITER.



Adopted in the offices of the principal Railroad and supply companies. SIMPLE, DURABLE, NEAT.

Operated at sight, and writes FASTER and BETTER than the most expert PENMAN.

### THOUSANDS of TESTIMONIALS.

Sold under Absolute Guarantee-order, with the privilege of returning if not suited.

Wyckoff, Seamans & Benedict,

281 & 283 Broadway, N. Y. 38 East Madison, Chicago.  
15 Chestnut, Philadelphia. 32 Hawley, Boston.

## BETHLEHEM IRON COMPANY, IRON AND STEEL RAILS.

GEO. A. EVANS, - 74 Wall Street, N. Y.

## SWIFT'S IRON AND STEEL WORKS,

No. 26 West Third Street, - Cincinnati, Ohio.

Manufacturers of all Weights of Standard and Narrow Gauge Rails by the most approved process. Also Rail Fastenings, Steel and Bloom Boiler Plate, and Tank, Sheet, and Bar Iron.

### FROM 1-4 TO 10,000 lbs. WEIGHT.

True to pattern, sound and solid, of unequalled strength, toughness and durability.  
An invaluable substitute for forgings or cast-irons requiring three-fold strength.  
CROSS-HEADS, ROCKER-ARMS, PISTON-HEADS, ETC., for Locomotives.  
15,000 Crank Shafts and 10,000 Gear Wheels of this steel now running prove its superiority over other Steel Castings.  
CRANK-SHAFTS, CROSS-HEADS and GEARING, specialties.  
Circulars and Price Lists free. Address

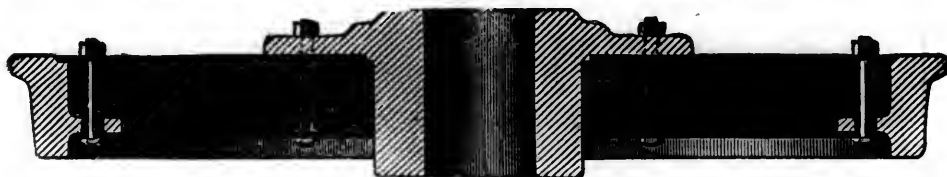
## STEEL CASTINGS

CHESTER STEEL CASTING CO.

407 Library St., PHILADELPHIA  
Works, CHESTER, Pa.

## ALLEN PAPER CAR WHEEL COMPANY,

GENERAL OFFICES: 240 BROADWAY, NEW YORK.



Manufacturers of Allen's Patent

## —PAPER CAR WHEELS,—

(ALL SIZES).

Especially adapted for Sleeping and Drawing Room Cars, Locomotive and Tender Trucks, Steel Tire, with annular web—strongest, most durable and economical wheel in use. Works at Hudson, N. Y.; and at Pullman (near Chicago) and Morris, Ill.

A. G. DARWIN, *Pres.*

C. H. ANTES, *Sec'y.*

J. C. BEACH, *Treas.*



THE USE OF THE

## McLeod Automatic Air Railroad Signal

Will prevent Railroad Accidents and Save Life.

"The McLeod Air Signal is an ingenious and inexpensive device by which the coming of a train is announced far in advance, both by visible and audible signals." [Mass. R. R. Com. Report.]

This signal has been fully tested on the New York and New England Railroad at Dudley and Bird Streets, by practical operation, and has proved a complete success, to the entire satisfaction of the many prominent Railroad men and experts who have watched and examined it. It provides an Automatic Block, Crossing, Station, Switch, Bridge, Yard and Curve Signals, Gate and Revolving Lanterns. Being operated by the weight of trains passing over an incline bar, forcing common air through a tube, by means of a bellows, which is positive in its action, highly commended by all railroad officials who examined it.

The company can shortly fill orders to place it on any railroad, and invite communication from Railroad officials from all parts.

## MCLEOD AIR RAILROAD SIGNAL CO.

4 Pemberton Square, Boston, Mass.

New York Office with Col. Thos. R. Sharp, 115 Broadway.

## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	162,907	148,551	184,680	105,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,276	224,921	261,439	300,155	278,439	246,062	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,950	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,658	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,393	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,556	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	570,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	903,204	1,178,795	1,474,612	1,879,006	2,300,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,052,735	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,670	1,591,052	1,569,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,845,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,629	392,921	432,615	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,796	4,973,052
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,056	192,299	177,161	229,858	228,653	221,320	211,014	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	624,728	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,402	495,797	574,040	595,306	630,598	512,965	626,728	6,349,057
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,563	249,252	239,891	2,393,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	682,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	203,677	200,064	199,840	190,125	272,114	247,332	225,678	200,450	192,622	2,487,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	265,998	255,212	2,641,675
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,003,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	230,916	230,916	145,803	136,517	136,517	135,549	160,789	210,262	256,924	262,986	258,812	2,403,224
1882.....	159,676	158,590	148,166	141,957	134,378	135,184	135,174	137,475	157,874	267,433	295,110	279,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	261,082	3,408,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	280,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,544	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,784,513	1,814,860	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,888	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	509,683	667,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,231								



## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

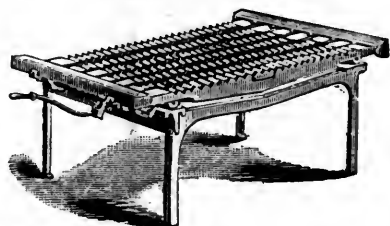
Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq.*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Ferri	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S.	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point	1,232,200	semi-an	Aug. '82 6	Little Schuylkill*... 50	2,046,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*	5,840,000	semi-an	Sept. '82 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil. pref	821,300	semi-an.	July '80 2
Augusta and Savan*	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv... 100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt M*	225,000	semi-an	Jan. '82 3	Lowell & Andover.....100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington & Weld'n. 100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio.....100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Jan. '82 2 1/2	Wil., Col., & Ang.....100	960,000	semi-an.	Jan. '83 3
" " pref. 100	5,000,000	semi-an	Jan. '83 3	Maine Central.....100	3,603,300	semi-an.	Feb. '82 2 1/2	Winchester & Poto'c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manchester & Law..... 00	1,000,000	semi-an.	Nov. '82 5	Winchester & Strash.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	June '82 1 1/2	Manhattan.....100	13,000,000	.....	.....	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	" " 1st pref. 100	6,500,000	q'arterly	Jan. '83 1 1/2	HORSE-POWER R. R.			
Bos. & N. Y. Air Line pf. 100	2,795,227	q'arterly	June '82 1	" " 2d pref. 100	6,500,000	q'arterly	Jan. '83 1 1/2	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos., Cl., F. & N. B. pref. 100	1,750,100	semi-an	Oct. '82 3 1/2	Marq. Hout. & Ont.....100	2,306,600	.....	Feb. '83 4	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Bos., Conc. & Mont. pf.* 100	800,000	semi-an	Nov. '82 3	" " pref. 100	2,259,026	semi-an.	Feb. '83 4	Balt., Cat. & El. Mills. 100	80,000	semi-an.	Jan. '83 2 1/2
Boston and Lowell..... 500	3,940,000	semi-an	Jan. '83 2 1/2	Massachusetts*.....100	2,259,026	semi-an.	Feb. '83 3	Bleeker St. & Ful. F. Y. 100	900,000	semi-an.	July '82 1/2
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Boston & Providence.....100	4,000,000	semi-an	Jan. '83 3 1/2	Michigan Central.....100	18,738,204	semi-an.	Feb. '83 3	Broadway (Brooklyn) 100	250,000	q'arterly	Oct. '82 6
Attleborough Br.....100	137,700	semi-an	Jan. '83 3 1/2	Middlesex Central.....100	280,000	semi-an.	Jan. '83 5	B'way & 7th Av. (N. Y.) 100	2,100,000	q'arterly	Oct. '82 2
Bos., Revere B. & Lynn.....100	419,400	semi-an	Jan. '83 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 3 1/2	B'klyn & Hunter's Pt. 100	400,000	semi-an.	Oct. '82 6
Buffalo, N. Y. & Erie*.....100	950,000	semi-an	Dec. '82 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 1 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Buff. Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2	Bushwick (Brooklyn) 100	309,000	semi-an.	Oct. '82 6
Camden & Atlantic..... 50	377,400	q'arterly	Nov. '82 3	Mobile & Montgomery 100	3,022,517	semi-an.	Jan. '83 3 1/2	Cambridge.....100	608,000	q'arterly	Oct. '82 4 1/2
" " pref. 50	880,650	q'arterly	Nov. '82 4	Morris & Essex..... 50	15,000,000	semi-an.	Jan. '83 6	Can. Park N. & E. Riv. 100	1,800,000	q'arterly	Oct. '82 6
Camden & Burl. Co.....100	381,925	semi-an	Jan. '83 3	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Nov. '82 4	Christoph'r & Tenth St 100	650,000	semi-an.	Aug. '82 2 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Nashua and Lowell..... 50	800,000	semi-an.	Oct. '82 1 1/2	Citizens' (Phila.)..... 50	192,500	q'arterly	Jan. '82 2 1/2
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua & Rochester.....100	1,305,800	semi-an.	June '82 3	Citizens' (Phg.)..... 50	200,000	annual	.....'80 14 1/2
Catawissa*..... 50	1,159,500	annual	Oct. '82 2 1/2	Nashv. & Decatur.....100	1,827,000	semi-an.	Apr. '82 1 1/2	Coney Island & E. R. 100	500,000	semi-an.	Jan. '83 6
" " pref. 20	2,200,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Jan. '83 5	Continental (Phila.)... 50	580,000	semi-an.	Aug. '82 4
" " new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Naugatuck.....100	2,000,000	semi-an.	Sept. '82 3	D. Dock, E. B'way & Bat 100	1,200,000	q'arterly	Oct. '82 3
Cayuga and Susq.*..... 50	589,110	semi-an	Jan. '83 4 1/2	Nequehoning Val'y* 50	1,300,000	semi-an.	Oct. '82 1	Eight St. & G. St. Ferry 100	747,000	semi-an.	May '82 6
Cedar Rapids & Mo. R. 100	6,850,400	q'arterly	Feb. '83 1 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Jan. '83 2	Frankf. & Southw (Ph) 50	600,000	q'arterly	Oct. '82 6
" " pref. 100	769,600	semi-an	Feb. '83 3 1/2	N. London North'n* 100	1,500,000	q'arterly	Jan. '83 2	Germantown, (Ph.)... 50	1,540,000	q'arterly	Jan. '83 2 1/2
Central of Georgia.....100	7,500,000	semi-an	Dec. '82 4	N. Y. Cen. & Hud. R. 100	89,428,330	q'arterly	Jan. '83 4	Girard College (Ph.)... 50	500,000	semi-an.	July '71 3
Central of New Jersey.....100	18,563,200	q'arterly	July '76 2 1/2	N. Y. and Harlem.....100	7,950,000	q'arterly	Jan. '83 4	Grand St. & Newton.....100	170,000	q'arterly	July '81 2 1/2
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	" " pref. 100	1,500,000	q'arterly	Jan. '83 1 1/2	Green & Coates St. (Ph) 50	708,600	q'arterly	Jan. '83 3
" " pref. 50	411,550	semi-an	Jan. '83 3	" " City Line..... 00	10,000,000	q'arterly	Jan. '83 1 1/2	Heston, Mantau & F'm 50	299,381	semi-an.	Jan. '75 4
Central Pacific.....100	59,275,500	semi-an	Jan. '83 1 1/2	N. Y. Lack. & West.....100	77,087,600	.....	.....	Highland.....100	600,000	semi-an.	Jan. '83 4
Cheshire preferred.....100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West. 100	7,987,500	annual	Jan. '83 6	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
Chicago and Alton.....100	11,181,741	semi-an	Mar. '83 4	" " pref. 100	7,987,500	semi-an.	Jan. '83 5	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
" " pref. 100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart.....100	15,500,000	q'arterly	Feb. '83 2	Malden and Melrose.....100	165,000	.....	.....
Chi., Burl. & Quincy.....100	69,508,105	q'arterly	Mar. '83 2	N. Y. Prov. & Boston.....100	3,000,000	q'arterly	Oct. '82 3	Metropolitan (Bost.)... 50	1,500,000	semi-an.	Jan. '83 4
Chi., Iowa & Nebras*.....100	3,916,200	semi-an	Jan. '83 4	Niag. Bridge & Canad* 100	1,000,000	semi-an.	Mar. '83 3	Middlesex (Boston).....100	650,000	semi-an.	Nov. '82 3 1/2
Chi., Mil. & St. Paul.....100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Mar. '83 3	N. Y., Bay Ridge & Jamic 100	150,000	.....	Oct. '87 7
" " pref. 100	14,401,483	semi-an	Oct. '82 3 1/2	" " pref. 100	1,000,000	semi-an.	Dec. '82 3 1/2	Ninth Av. (N. Y.).....100	707,320	.....	.....
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	Norfolk & Western pref. 100	15,000,000	q'arterly	Feb. '83 1 1/2	Orange & Newark.....100	282,555	.....	.....
" " pref. 100	21,525,353	q'arterly	Dec. '82 2	North Pennsylvania..... 50	4,527,150	q'arterly	Jan. '83 4	People's (Phila.) pref. 25	115,250	.....	July '82 2
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4	Philadelphia City..... 50	475,000	semi-an.	July '82 4
Chi. and West Mich. 100	6,151,000	semi-an	Feb. '83 3	Northern N. Hampshire 100	3,068,400	semi-an.	Dec. '82 3	Phila. and Darby..... 20	200,000	semi-an.	July '81 3 1/2
Chi., St. P., M. & O. pref. 100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern Pacific pref. 100	41,909,132	semi-an.	Jan. '83 5	Phila. & Grey's Ferry... 50	308,000	semi-an.	Jan. '82 6
Cin., Ham. & Dayton.....100	3,300,000	semi-an	Jan. '83 3	Norwich & Worcester* 100	2,604,400	q'arterly	Jan. '83 1 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
C. Ind., St. L. & Chi.....100	6,000,000	q'arterly	Jan. '83 1 1/2	Oregon & Transcont'l. 100	40,000,000	q'arterly	Feb. '83 2 1/2	Ridge Avenue (Ph.)... 50	420,000	semi-an.	Oct. '81 11
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Old Colony.....100	7,333,800	q'arterly	Feb. '83 4 1/2	Second Avenue (N. Y.) 100	1,190,500	semi-an.	July '82 4
Clev., Col. Cin. & Ind. 100	14,991,800	.....	Feb. '83 2	Oregon R'way & Nav. 100	13,000,000	q'arterly	Jan. '83 4 1/2	Second & Third Sts (Ph) 100	771,076	q'arterly	Jan. '83 4
Clev. & Pittsburgh* 50	11,244,336	q'arterly	Mar. '83 1 1/2	Oswego & Syracuse..... 100	1,320,400	semi-an.	Jan. '83 6 1/2	17th & 19th sts (Ph.)... 50	250,000	semi-an.	July '81 3
Columbus & Xenia* 50	1,786,200	q'arterly	Dec. '82 2	Panama.....100	7,000,000	semi-an.	Jan. '83 4 1/2	Sixth Avenue (N. Y.) 100	750,000	semi-an.	May '82 5
Col., Hock. Val. & Tol. 100	10,316,500	.....	Jan. '83 2 1/2	Paterson & Hudson*.....100	630,000	semi-an.	Jan. '83 3	Somerville (Boston).....100	113,000	semi-an.	Nov. '82 3
Concord..... 50	1,500,000	semi-an	Nov. '82 5	Paterson & Ramapo.....100	248,000	semi-an.	Nov. '82 4 1/2	South Boston..... 50	600,000	semi-an.	Jan. '83 4
Concord and Ports*.....100	350,000	semi-an	Jan. '83 3 1/2	Pember. & Hightst'n*... 0	342,150	semi-an.	Dec. '82 4 1/2	Third Avenue, N. Y.....100	2,000,000	q'arterly	Aug. '82 5
Conn. & Passump. Riv. 100	2,444,400	semi-an	Jan. '83 3	Pennsylvania Co..... 50	83,786,570	annual	Dec. '82 4	13th and 15th sts. Ph 50	334,829	q'arterly	Jan. '82 4
Connecticut River.....100	2,100,000	semi-an	Jan. '83 4	Pennsylvania Co..... 50	1,200,000	semi-an.	Feb. '83 4	28d street, N. Y.....100	600,000	semi-an.	Aug. '82 4
Cumberland Valley..... 50	1,292,950	q'arterly	Jan. '83 2 1/2	Peoria & Bureau Val* 100	1,200,000	semi-an.	Jan. '75 4	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
" " 1st pref. 50	241,900	semi-an	Oct. '82 4	Philadelphia & Erie* 50	3,013,700	semi-an.	Dec. '82 3	Union, Phila..... 50	1,005,000	semi-an.	Jan. '82 7
" " 2d pref. 50	243,000	semi-an	Oct. '82 4	" " pf. 50	2,400,000	semi-an.	July '76 3 1/2	West Philadelphia..... 50	750,000	semi-an.	July '77 10
Danbury & Norwalk..... 50	600,000	.....	Oct. '82 2 1/2	Phila. and Trenton.....100	1,250,100	q'arterly	Jan. '83 2 1/2	CANALS.			
Dayton and Mich.*..... 50	2,402,573	semi-an	Oct. '82 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	Pittsb., Ft. W. & Chi. 100	19,714,285	q'arterly	Jan. '83 1 1/2	Delaware Division..... 50	1,633,350	semi-an.	Feb. '83 2
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	" " Special Imp. 100	6,770,900	q'arterly	Jan. '83 1 1/2	Delawa. and Hudson 100	20,000,000	q'arterly	Dec. '82 1 1/2
Del. & Bound Brook* 100	1,652,000	q'arterly	Feb. '83 1 1/2	Pittsfield & N. Adams.....100	450,000	semi-an.	Jan. '83 2 1/2	Delaware & Raritan* 100	5,847,400	q'arterly	Jan. '83 2 1/2
Del., Lack. & Western 50	26,000,000	q'arterly	Jan. '83 2	Portl., Saco & Portsm.....100	1,500,000	semi-an.	Jan. '83 3	Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82 2
Denver & Rio Grande.....100	29,160,000	q'arterly	Jan. '82 1 1/2	Providence & Worcester.....100	2,000,000	semi-an.	Jan. '83 3	Monongahela Nav..... 50	1,004,500	semi-an.	Jan. '83 3 1/2
Detroit, Lans. & Nor.....100	1,825,600	semi-an	Feb. '83 3	Rensselaer & Saratog* 100	7,000,000	q'arterly	Aug. '82 2	Morris, consolidated.....100	1,025,000	semi-an.	Aug. '82 2
" " pref. 100	2,503,380	semi-an	Feb. '83 3 1/2	Richmond & Danv.....100	5,000,000	q'arterly	Aug. '82 2	" " preferred.....100	1,175,000	semi-an.	Aug. '82 5
Dubuque & Sioux C'y* 100	5,000,000	semi-an	Oct. '82 3	Richmond & Petersb.....100	1,009,300	semi-an.	Aug. '82 2	Pennsylvania..... 50	4,501,200	.....	.....
East Pennsylvania*..... 50	1,709,550	semi-an	Jan. '83 3	Roch. & Genesee Val.* 100	555,200	semi-an.	Jan. '83 3	Schuyl. Nav., com.* 50	859,100	annual.	Oct. '82 500
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Rome Water & Ogdens 100	5,293,900	.....	Jan. '83 3	" " pref. 50	3,200,000	annual.	Oct. '82 501
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Rutland preferred..... 100	4,000,000	semi-an.	Sept. '82 1	MISCELLANEOUS.			
Eel River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Spyten Du'vil & Pt. M. 100	989,000	semi-an.	Jan. '83 4	Adams Express.....100	12,000,000	q'arterly	Dec. '82 2
Elmira & Williamspt* 50	500,000	semi-an	Nov. '82 1 1/2	St. L., Alt. & T. Haute. 100	2,300,000	.....	Dec. '82 4	American Express..... 50	18,000,000	semi-an.	Jan. '83 3
" " pref. 50	500,000	semi-an	Jan. '83 3 1/2	" " pref. 100	2,468,406	.....	Feb. '83 3 1/2	Amoskeag Manuf. Co. 100</			

**WATER TUBE STEAM BOILERS.**

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116 James Street, Glasgow.

**W. RYDER'S**  
**PATENT**  
**Practical Shaking Grate Bar,**

OFFICE: 134 Water Street,  
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The W. Ryder Double-Acting Grate Bars are so constructed as to rest upon a frame with friction rollers, and by means of a lever attached to the front rocking bar, a reverse or reciprocal motion is produced in each bar which effectually breaks up the clinkers, and removes all the ashes from the bottom of the furnace.

By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop its working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.



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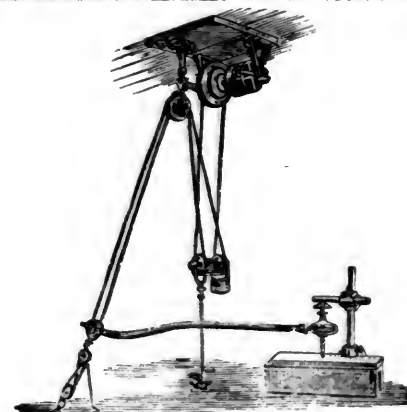
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Three Rivers, Mich.



## FINANCIAL DEPARTMENT.

## OUR NATIONAL COINAGE.

THE designers of coins at our national mints appear to have been unfortunate for many years in the selection of designs for our coinage. The time was, half a century ago, when American coins were really attractive in appearance, but lately the reverse has been the case, and the United States coins are conspicuous for the absence of taste on the part of the designing artist. The copper cent is almost the only handsome coin we can boast. The diminutive doll-like figures on our half and quarter dollars, dimes and half-dimes, are utterly without beauty, while the standard silver dollar with the awkward disproportionate eagle on the reverse is about as ugly a coin as could be conceived. There is a natural fitness in its nick-name, the "buzzard dollar." Our gold coins are little better, and it seems to be a settled belief on the part of our designers that the Goddess of Liberty is an uncompromising old maid, from the rigidity and sternness of countenance they have always given her. As to producing a coin with some other design than that of our presiding deity, such an idea would seem rank heresy to their devout and artistic minds.

But apart from the lack of beauty in our coins, there is a lack of individuality which creates constant confusion and permits of ready fraud. The truth of this assertion is strikingly exemplified in the recent coinage of the new nickel five-cent piece. There is positively nothing about the coin to indicate its denomination beyond the Roman numeral "V" upon the reverse the word "cent" being omitted. So nearly does this coin resemble our five dollar gold piece in size, obverse design and weight, that shrewd swindlers would find little difficulty in giving it a thin coating of gold and passing it off for a half-eagle upon ignorant and unsuspecting persons. Foreigners on seeing the "V" and observing the size, weight and apparent metal of the coin would readily accept it as a genuine half-eagle. This opportunity for fraud has been recognized by the Treasury Department, and the entire issue of the new five-cent piece is to be withdrawn from circulation, official orders to that effect being given a few days after its delivery from the mint. Everyone remembers the confusion attendant upon the circulation of the twenty-cent piece, which was exactly similar in design to the quarter-dollar differing but slightly therefrom in size and weight, and distinguishable only by the absence of milling on the edge, and the words "twenty

cents" in diminutive letters on the reverse. Many a person can recall with a pang, their payment of a two dollar and-a-half gold piece in mistake for a copper cent fresh from the mint, and careless people in moments of haste have even mistaken half for quarter-dollars and *vice versa*. We have often heard Americans complain of the similarity of British gold coins, the sovereigns and half-sovereigns being of an exactly similar design, bearing no mark or sign of denominational value, and consequently liable to be mistaken for each other, particularly by our own people, who have been unused to gold in common circulation, but there is quite as much cause for complaint at home. There is no reason why we could not possess specie both handsome in design and of denominational distinctness, but if this dual achievement is beyond the power of our coin architects, we would sacrifice beauty for utility and have the distinctness alone. What we do object to most strenuously is the absence of both of these attributes.

It would seem feasible to coin specie with a general design common to all the denominations, yet differing in detail sufficiently to insure instant recognition, or to go even farther yet and give each denomination its separate and distinct design; and there is furthermore no reason why each coin should not have its denomination plainly indicated upon *both* sides and not upon one only as appears to be the universal practise with nearly all European nations as well as our own. In this regard we might adopt the custom prevalent in China, Japan and other Asiatic countries and punch holes in our coins, varying in size, shape and number to indicate respective values. Almost any change in our coinage designs would be for the better, and if any modification is contemplated it would be well to make the change a radical one, giving us coins at once handsome in appearance and possessing conspicuous and distinct signs for every denominational value.

## Financial Review.

WEDNESDAY EVENING, FEBRUARY 21, 1883.

The rate for call loans during the forenoon on stocks as collaterals was  $3\frac{1}{2}$  per cent, and on Governments 3 per cent; in the afternoon the rate was 2 per cent on call on stocks.

The posted rates for foreign exchange were 4.83 and  $4.83\frac{1}{2}$  and  $4.86@4.86\frac{1}{2}$ . The actual rates were as follows: Sixty days,  $4.82\frac{1}{2}@4\frac{1}{2}$ ; demand,  $4.85\frac{1}{2}@4\frac{1}{2}$ ; cables,  $4.86@4.86\frac{1}{2}$ . Commercial bills were  $4.81@4.81\frac{1}{2}$ . Continental bills were as follows, viz: Francs,  $5.22\frac{1}{2}@5.21\frac{1}{2}$  and  $5.19\frac{3}{4}@5.18\frac{3}{4}$ ; reichsmarks,  $94\frac{1}{2}@94\frac{1}{2}$  and  $95@95\frac{1}{2}$ ; guilders,  $39\frac{1}{2}$  and  $40\frac{1}{2}$ .

The report of the Quincy Mining Company of Michigan shows that the tons of rock hoisted during the year 1882 amounted to 109,751.

The total stamp rock treated was 101,327 tons, and the yield of stamp rock treated (3.21 per cent) was 6,508,410 pounds. The product of mineral was 6,874,230 pounds, and the product of refined copper was 5,682,663 pounds. There was realized from the sale of silver \$3,142.83. Estimating the value of the copper on hand in New York at 18 cents a pound and the product left over at the mine at 81 per cent yield and 15 cents per pound, the gross sum realized for the year's product was \$973,506.10. The running expenses at the mine were \$381,010.82; building and construction account, \$63,427.63; smelting, transportation, and all other expenses, \$96,969.13—total expenses, \$541,407.58. The net mining profit for the year was \$432,098.52; realized during the year from interest and profit on sale of company's stock, \$16,455.33—total earnings, \$448,553.85. The balance on hand January 1, 1882, was \$735,313.79. On February 20, 1882, a dividend was paid of \$320,000, and on August 21 one of \$200,000, which left a balance of assets January 1, 1883, of \$663,867.64. A dividend of \$6 per share, or \$240,000, was declared payable February 15, 1883. During the past year the average force employed was 438 men; average number of miners, 152; average wages of miners on contract per month, \$48.83. The yield of mineral per fathom of ground broken was 970 pounds, and the yield of refined copper per fathom of ground broken was 800 pounds. The total amount of dividends declared to January 1, 1883, was \$3,330,000.

The question as to whom payment should be made on called Government bonds, which bonds had been bequeathed to a person for life with succession to parties specified, has just been decided by the First Comptroller of the Treasury at Washington. A testator bequeathed certain bonds to his daughter for her use during her life, and after her death to her children, or in default of these to parties specified. The bonds became due, and the daughter asked the Secretary of the Treasury to whom payment should be made. The inquiry was referred to the Comptroller, who holds that payment must be made to a trustee appointed by the proper court of equity on a trust to invest the proceeds of the bonds, pay the profits to the daughter during her life, to preserve the fund, and on her death to pay it over to the final legatee.

The earnings of the Kingston and Pembroke Railway during the year 1882 were: from passengers and mails \$29,265.38, and from freight \$96,796.86, a total of \$126,062.24; the expenses during the same time were \$100,484.19—leaving a profit of \$25,578.05. The earnings for 1881 were \$76,061.79; expenditure, \$60,349.98; balance, \$15,711.81. The cash receipts for 1882 were \$832,550.17; expenditure, \$831,967.80, leaving a balance in hand of \$582.37.

The Chief of the Bureau of Statistics reports that the total values of the exports of domestic breadstuffs from the United States during the month of January, 1883, were \$15,874,286, and during January, 1882, \$11,977,524; for the seven months ended January 31, 1883, \$133,696,842, and for the same period of the preceding year, \$124,121,439.

## Statement of the Public Debt of the United States, February 1, 1883.

DEBT BEARING INTEREST.		
	Amount Outstanding.	Accrued Interest.
5 per cent funded loan of 1881, continued at 3½ per cent. ....	\$81,328,750 00	\$711,626 56
3 per cent loan of July 12, 1882. ....	291,444,350 00	2,185,832 62
4½ per cent funded loan of 1891. ....	250,000,000 00	1,875,000 00
4 per cent funded loan of 1907. ....	738,967,800 00	2,463,226 00
4 per cent refunding certificates. ....	389,150 00	1,297 17
3 per cent navy pension fund. ....	14,000,000 00	35,000 00

Aggregate of debt bearing interest. .... \$1,376,130,050 00 \$7,271,982 35  
Interest due and unpaid. .... 2,433,368 57

## DEBT ON WHICH INTEREST HAS CEASED SINCE MATURITY.

	Amount Outstanding.	Interest due and unpaid.
to 6 per cent. old debt, 1837. ....	\$57,665 00	\$64,174 81
5 per cent. Mexican indemnity stock, 1846-'52. ....	1,104 91	85 74
6 per cent. bonds, 1847-'67. ....	1,250 00	22 00
6 per cent. bounty land scrip, 1847-'49. ....	3,275 00	213 06
5 per cent. Texas indemnity stock, 1850-'64. ....	20,000 00	2,945 00
5 per cent. bonds, of 1858-'74. ....	7,000 00	875 00
5 per cent. bonds, of 1860-'71. ....	10,000 00	600 00
6 per cent. 5-20 bonds, 1862, called. ....	361,550 00	5,297 15
6 per cent. 5-20 bonds, June 1864, called. ....	50,400 00	994 40
6 per cent. 5-20 bonds, 1865, called. ....	70,450 00	18,335 45
5 per cent. 10-40 bonds, 1864, called. ....	280,100 00	41,926 40
6 per cent. Consol. bonds, 1865, called. ....	358,200 00	11,917 38
6 per cent. Consol. bonds, 1867, called. ....	789,300 00	108,676 65
6 per cent. Consol. bonds, 1868, called. ....	245,150 00	20,413 11
6 per cent. loan, Feb. 8, 1861, matured Dec. 31, 1880. ....	75,000 00	4,830 00
5 per cent. funded loan 1881, called. ....	547,200 00	869 54
5 per cent funded loan 1881, called, continued at 3½ p.c. ....	7,675,900 00	46,315 18
Oregon War Debt, March 2, 1861, matured July 1, 1881. ....	7,800 00	1,558 50
6 per cent loan of July 17 and Aug. 5, 1861, matured June 30, 1881. ....	474,650 00	7,813 50
6 per cent loan of July 17 and Aug. 5, 1861, continued at 3½ per cent, called. ....	1,499,700 00	18,079 04
6 per cent loan of March 3, 1863, matured June 30, 1881. ....	149,600 00	4,011 13
6 per cent loan of March 3, 1863, continued at 3½ per cent, called. ....	1,396,550 00	15,273 55
1-10 to 6 per cent. Treasury notes, prior to 1846. ....	82,525 35	2,668 06
1-10 to 6 per cent. Treasury notes, 1846. ....	5,900 00	200 60
6 per ct. Treasury notes, 1847. ....	950 00	57 00
3 to 6 per cent. Treasury notes, 1857. ....	1,700 00	99 00
6 per ct. Treasury notes, 1861. ....	3,000 00	364 50
7 3-10 per cent. 3 years' Treasury notes, 1861. ....	16,300 00	1,104 43
5 per cent. 1 year notes, 1863. ....	41,115 00	2,667 85
5 per cent. 2 year notes, 1863. ....	32,300 00	1,587 30
6 per ct. compound interest notes, 1863-64. ....	216,770 00	44,321 01
7 3-10 per cent. 3 years' Treasury notes, 1864-65. ....	138,350 00	20,331 38
6 per cent. certificates of indebtedness, 1862-63. ....	4,000 00	253 48
4 to 6 per cent. temporary loan, 1864. ....	2,960 00	244 19
3 per cent. certificates, called. ....	5,000 00	394 31

Aggregate of debt on which interest has ceased since maturity. .... \$14,632,715 26 \$448,919 50

DEBT BEARING NO INTEREST.		
Demand notes, 1861-62. ....	\$59,250 00	
Legal tender notes, 1862-63. ....	346,681,016 00	
Certificates of Deposit. ....	12,490,000 00	
Gold certificates, 1863 and 1882. ....	72,776,940 00	
Silver certificates, 1878. ....	72,745,470 00	
Unclaimed interest. ....		\$4,619 96
Fractional currency, 1862, 1863 and 1864 \$15,394,027 17		
Less amount estimated as lost or destroyed, act of June, 21, 1879. ....	8,375,934 00	
	7,018,093 17	

Aggregate of debt bearing no interest. .... \$511,770,769 17 \$4,619 96

## RECAPITULATION.

	Amount Outstanding.	Interest.
Debt bearing interest in coin, viz:		
Bonds at 5 per cent, continued at 3½ per cent. ....	\$81,328,750 00	
Bonds at 4½ per cent. ....	250,000,000 00	
Bonds at 4 per cent. ....	738,967,800 00	
Bonds at 3 per cent. ....	291,444,350 00	
Refunding certificates. ....	389,150 00	
Navy pension fund, 3 p.c. ....	14,000,000 00	
	\$1,376,130,050 00	\$9,705,350 92
Debt on which interest has ceased since maturity. ....	14,632,715 26	448,919 50
Debt bearing no int., viz:		
Old demand and legal-tender notes. ....	\$346,740,266 00	
Certificates of deposit. ....	12,490,000 00	
Gold & silver certificates. ....	145,522,410 00	
Fractional currency. ....	7,018,093 17	
	\$511,770,769 17	
Unclaimed interest. ....		4,619 96
	\$1,902,533,534 43	\$10,158,890 38

Total debt, principal and interest to date, including interest due and unpaid. .... \$1,912,692,424 81

## AMOUNT IN TREASURY.

Interest due and unpaid. ....	\$2,433,368 57
Debt on which interest has ceased. ....	14,632,715 26
Interest thereon. ....	448,919 50
Gold and silver certificates. ....	145,522,410 00
U. S. notes held for redemption of certificates of deposit. ....	12,490,000 00
Cash balance available Jan. 1, 1883. ....	143,258,218 51
	\$318,785,631 84
Debt, less am't in Treasury Feb. 1, 1883. ....	\$1,593,906,792 97
Debt, less am't in Treasury Jan. 1, 1883. ....	1,607,543,076 84
Decrease of debt during the month. ....	\$13,636,883 87
Decrease of debt since June 30, 1882. ....	\$95,007,667 75

BONDS ISSUED TO THE PACIFIC RAILROAD COMPANIES, INTEREST PAYABLE IN LAWFUL MONEY.

	Amount Outstanding.	Accrued Interest not paid.
Central Pacific bonds, 1862-64. ....	\$25,885,120 00	\$129,425 60
Kansas Pacific bonds, 1862-64. ....	6,303,000 00	31,515 00
Union Pacific bonds, 1862-64. ....	27,236,512 00	136,182 56
Cent. Branch Union Pacific bonds, 1862-64. ....	1,600,000 00	8,000 00
West'n Pacific Bonds, 1862-64. ....	1,970,560 00	9,582 80
Sioux City & Pacific bonds, 1862-64. ....	1,628,320 00	8,141 60
Totals. ....	\$64,623,512 00	\$323,117 56

Interest paid by the United States, \$57,283,388.10; interest repaid by transportation of mails, &c., \$16,317,578.67; interest repaid by cash payments: 5 per cent net earnings, \$655,198.87; balance of interest paid by United States, \$40,310,610.56.

The foregoing is a correct statement of the public debt, as appears from the books and Treasurer's returns in the Department at the close of business, January 31, 1883.

CHARLES J. FOLGER,

Secretary of the Treasury.

## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Feb. 20.

	W. 14. Th. 15. F. 16. Sat. 17. M. 19. Tu. 20.
Adams Express. ....	135 133½ 135
Albany and Susq. ....	128
1st mortgage. ....	
2d mortgage. ....	
American Express. ....	90½ 90½ 91 91 90½
Burl., C. R. & Nor. ....	80½ 80½ 81½ 81½ 80½
1st mortgage 58. ....	100½ 100½ 100 100½ 100½
Canada Southern. ....	66½ 66 65½ 65½ 64½
1st mortgage guar. ....	94½ 94½ 94½ 94½ 94
Canadian Pacific. ....	60 59½ 59½ 59½ 59½
Central of N. Jersey. ....	72 71½ 71½ 71½ 68½
1st mort. 1890. ....	114
78, consol. ass. ....	110 110½ 110½ 109½
78, convertible ass. ....	110½ 110 110 110 110½
78, Income. ....	106 104 105½
Adjustment. ....	
Central Pacific. ....	80½ 80½ 80½ 80 79½ 79½
68, gold. ....	114 113½ 113½ 113½
1st M. (San Joaquin) ....	
1st M. (Cal. & Or.) ....	
Land grant 68. ....	104½ 104½
Chesapeake & Ohio. ....	21 21
1st pref. ....	31 30 30 30 30
2d pref. ....	23
1st mort., series B. ....	90½ 90 90 90½ 90½
Chicago and Alton. ....	130½ 130½ 130
Preferred. ....	141½
1st mortgage. ....	
Sinking Fund. ....	114

Chi., Bur. & Quincy 78, Consol. 1903. ....	118½ 118½ 118½ 118½ 116½ 116½
Chi., Mil. & St. Paul Preferred. ....	100½ 100½ 100½ 100½ 98½ 98½
1st mortgage, 88. ....	118 117½ 117½ 117½ 117
2d mort., 7 3-10s. ....	120½ 121 121 121
78, gold. ....	128 128
1st M. (La. C. div.) ....	117½ 119
1st M. I. & M. div. ....	
1st M. (I. & D. ext.) ....	
1st M. (H. & D. div.) ....	
1st M. (C. & M. div.) ....	
Consolidated S. F. ....	123 123
Chi. & Northwestern Preferred. ....	130 129½ 129½ 129½ 128½ 129
1st mortgage. ....	143½ 143½ 144 144 143½ 143½
Sinking Fund 68. ....	105 111
Consolidated 78. ....	
Consol. Gold bonds 125. ....	125 125 125
Do. reg. ....	124½ 124½
Chi., R. Isl. & Pac. 68, 1917, C. ....	121½ 121 121 121½ 121½ 120½
Clev., Col., Cin. & Ind. ....	74½ 74 73½ 70 70 69½
Clev. & Pittsburg gr. 78, Consolidated. ....	
4th mortgage. ....	125 125
Col., Chi., & Ind. Cent. 1st mortgage. ....	5½ 5 5 5 5
2d mortgage. ....	
Del. & Hud. Canal. Reg. 78, 1891. ....	105½ 106 106½ 106½ 106½ 106
Reg. 78, 1884. ....	103½ 114 114½ 114½
78, 1894. ....	
Del., Lack. & Western 1st mortgage 78. ....	119½ 118½ 118½ 119½ 118½ 119½
Consol. 1907. ....	
Erie Railway. ....	
1st mortgage. ....	
2d mort. 58, ext. ....	
3d mortgage. ....	
4th mort. 58, ext. ....	103½
5th mortgage. ....	109
78, Consol. gold. ....	129½ 129
Great West. 1st mort. 2d mortgage. ....	100½ 100½
Hannibal & St. Jo. Preferred. ....	84½ 85 84 84 82 81
88, Convertible. ....	108 108
Houston & Tex. Cen. 1st mortgage. ....	73 108 107½ 107½
2d mortgage. ....	
Illinois Central. ....	144½ 144½ 142½ 143½ 143 142½
Lake Shore & Mich. So. Consol. 78. ....	103½ 107½ 107½ 107 107½ 107½
Consol. 78, reg. ....	
2d Consolidated. ....	
Leh. & W. B. con. ass. ....	104½ 105 104 102
Long Dock bonds. ....	119
Louisville & Nash. 78, Consol. reg. ....	54½ 52½ 52½ 52½ 51½ 51½
Manhattan. ....	50 47 48 46½
1st pref. ....	
Met. Elevated. ....	83½ 84 97½ 97½ 97½ 97½
1st mortgage. ....	
Michigan Central 78, 1902. ....	94½ 92½ 93½ 92½ 90½ 90½
Morris & Essex. ....	122 122 121 120
1st mortgage. ....	135 135
2d mortgage. ....	
78 of 1871. ....	
78, Convertible. ....	
78, Consolidated. ....	122 122 130 123½
N. Y. Cen. & Hud. R. 68, S. F. 1883. ....	125½ 125½ 124½ 124½ 124½ 124½
68, S. F., 1887. ....	
1st mortgage. ....	130 108
1st mortgage, reg. ....	
N. Y. Elevated. ....	105 105 105 105
1st mortgage. ....	
N. Y. & Harlem. ....	200
Preferred. ....	
1st mortgage. ....	130
1st mortgage, reg. ....	
N. Y. Lake Erie & W. Preferred. ....	36½ 36½ 34½ 35½ 34½ 34½
2d Consolidated. ....	95 94½ 94½ 95 94½ 92½
New 2d 58 fund. ....	93½ 94½
N. Y., N. Hav'n & Hart. ....	172 172 173 173
North Mo. 1st mort. ....	119½
Northern Pacific. ....	47½ 46½ 46½ 46½ 45½ 45½
Preferred. ....	82½ 81½ 81½ 81½ 80½ 80½
Ohio & Mississippi. ....	29 31½ 31½ 31½ 31½ 31½
Preferred. ....	96
2d mortgage. ....	
Consolidated 78. ....	
Consol. S. Fund. ....	116 116½ 116½ 116½ 116½ 116½
Pacific Mail S. S. Co. ....	41½ 41½ 41½ 41½ 40½ 40
Pacific R. R. of Mo. ....	
1st mortgage. ....	105½
2d mortgage. ....	
Panama. ....	
Phila. & Reading. ....	54 53½ 51½ 51½ 50½ 50½
Pitts. Ft. W. & Chi. gtd. 1st mortgage. ....	133



2d mortgage.....	133%	133%	133%	133%	133%
3d mortgage.....	121	121%	121%	120	119%
Pullman Palace Car	121	121%	121%	120	119%
Quicksilver Min'g Co	8%	8%	8%	8%	8%
Preferred.....	41	41	41	41	41
St. Louis & San Fran	29%	30	30	48%	48%
Preferred.....	50	49%	49%	91	90
1st Preferred.....	67	67	66	66%	65
St. L., Alt'n & T. H.	67	67	66	66%	65
Preferred.....	97	97	97	92	92
1st mortgage.....	105	105	105	105	105
2d mort. pref.....	105	105	105	105	105
Income bonds.....	105	105	105	105	105
St. L., Iron Mt. & S.	105	105	105	105	105
1st mortgage.....	105	105	105	105	105
2d mortgage.....	105	105	105	105	105
Toledo and Wabash.	105	105	105	105	105
1st mortgage.....	105	105	105	105	105
2d mortgage.....	105	105	105	105	105
7s, Consolidated..	97%	96	96	96	96
St. Louis Division	102	102	102	102	102
Union Pacific.....	93%	93	93%	94%	93
1st mortgage.....	113%	113%	114	114	114
Land Grant 7s.....	109	109	109	109	109
Sinking Fund 8s.	118%	118%	118%	118%	118%
United States Ex.	63	63%	63%	63%	62
Wabash, St. L. & Pac	30%	29%	28%	28%	28%
Preferred.....	50%	49%	49	48%	46%
New mort. 7s.....	47	47	47	47	47
Wells-Fargo Ex.....	124%	124%	123	123	123
Western Pacific b'ds	80%	80%	80%	80%	80%
Western Union Tel.	80%	80%	80%	80%	80%
7s., S.F. conv., 1900	80%	80%	80%	80%	80%
FEDERAL STOCKS:—					
U. S. 4s, 1907, reg.	119%	119%	119%	119%	119%
U. S. 4s, 1907, coup.	120	120	120	120	120
U. S. 4s, 1891, reg.	112%	112%	112%	112%	112%
U. S. 4s, 1891, coup.	113%	113%	113%	113%	113%
U. S. 5s, cont'd at 3%	104	104	104	104	104
U. S. 3s, reg.....	104	104	104	104	104
Dt. of Col. 3-65s, reg	103%	103%	103%	103%	103%
Dt. of Col. 3-65s, coup	103%	103%	103%	103%	103%

## Boston Stock Exchange.

Closing Prices for the Week Ending Feb. 20.

	W.14.	Th.15.	F.16.	Sat.17.	M.19.	Tu.20.
Atch., Top. & San. Fe.	80%	79%	79%	79%	79%	79%
1st mortgage.....	120%	120%	120%	120%	120%	120%
Land Grant 7s.....	113	113	113	113	113	113
Boston & Albany...	175	175%	175%	175%	175	175
Boston and Lowell.	97	97	97	97	97	97
Boston & Maine.....	155%	155%	155%	155%	155%	155%
Boston & Providence	101	101	101	101	101	101
Bos'n, Hart. & Erie 7s	101	101	101	101	101	101
Burl. & Mo. R. L. G. 7s	101	101	101	101	101	101
Burl. & Mo. R. in Neb	101	101	101	101	101	101
6s, exempt.....	81	81	81	81	81	81
Chi., Burl. & Quincy	118%	118%	118%	118%	117%	117
Cin., Sand & Clev. (\$50)	22%	22%	22%	22%	22%	22%
Concord (\$50).....	101%	101%	101%	101%	101%	101%
Connecticut River.	101	101	101	101	101	101
Eastern.....	46%	46	46%	46%	46	46
New 6s, Bond.....	109%	109%	109%	109%	109%	109%
Fitchburg.....	119	119	119	119	117%	117
N. Y. & New England	46%	46%	46%	46	46	45%
7s.....	115	115	115	115	115	115
Northern N. H.....	111	111	111	111	111	111
Norwich & Worcester	101	101	101	101	101	101
Ogden & Lake Cham	101	101	101	101	101	101
Old Colony.....	136	136	136	136	135%	135%
Ph., Wil. & Balt. (\$50)	112%	112%	112%	112%	112%	112%
Portl'd, Saco & Ports	112%	112%	112%	112%	112%	112%
Pueblo & Ark Val 7s	113	113	113	113	113	113
Pullman Palace Car	122	121%	121%	121	120	120
Union Pacific.....	92%	93%	93%	94%	92%	93%
6s.....	113	113	113	113	112%	112%
Land Grant 7s.....	113	113	113	113	113	113
Sinking Fund 8s.	113	113	113	113	113	113
Vermont & Mass...	101	101	101	101	101	101
Worcester & Nashua	101	101	101	101	101	101
Cambridge (Horse)...	70	70	70	70	70	70
Metropolitan (Horse)	70	70	70	70	70	70
Middlesex (Horse)...	70	70	70	70	70	70
Cal. & Hecla Min'g Co	243	242	243	243	242%	242%
Quincy.....	50%	50%	50%	50%	50	50

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Feb. 20.

	W.14.	Th.15.	F.16.	Sat.17.	M.19.	Tu.20.
Allegh'y Val. 7 3-10s	45	47	47	47	47	47
7s, Income.....	16%	16%	15%	15%	15%	15%
Buff., Pitts & West.	16%	16%	15%	15%	15%	15%
Camd'n & Am. 6s, '83	118	118	118	118	118	118
6s, 1889.....	118	118	118	118	118	118

Mort. 6s, 1889.....	118	118	118	118	118	118
Camden & Atlantic.	118	118	118	118	118	118
Preferred.....	118	118	118	118	118	118
1st mortgage.....	118	118	118	118	118	118
2d mortgage.....	118	118	118	118	118	118
Catawissa.....	118	118	118	118	118	118
Preferred.....	118	118	118	118	118	118
2d pref.....	55	55	55	55	55	55
7s, new.....	125	125	125	125	125	125
Del. & Bound Brook	125	125	125	125	125	125
7s.....	125	125	125	125	125	125
Elmira & Williamspt	125	125	125	125	125	125
Preferred.....	125	125	125	125	125	125
Hunt. & B. Top Mt.	125	125	125	125	125	125
Preferred.....	125	125	125	125	125	125
2d mortgage.....	125	125	125	125	125	125
Lehigh Navigation.	39	38%	38%	38%	38%	38%
6s, 1884.....	102%	102%	102%	102%	102%	102%
Gold Loan.....	112	112	112	112	112	112
Railroad Loan.....	116%	116%	116%	116%	116%	116%
Conv. Gold Loan.....	118%	118%	118%	118%	118%	118%
Consol. Mort. 7s.	118%	118%	118%	118%	118%	118%
Lehigh Valley.....	65	65	64%	64%	64	64
1st mort. 6s, coup	122	122	122	122	122	122
1st mort. 6s, reg.	135	135	135	135	135	135
2d mort. 7s.....	135	135	135	135	135	135
Consol. mort. 6s.	123%	123%	123%	123%	123%	123%
Consol. mtg. 6s, reg	123%	123%	123%	123%	123%	123%
Little Schuylkill...	123%	123%	123%	123%	123%	123%
Minehill & Sch. Hav'n	123%	123%	123%	123%	123%	123%
North Pennsylvania	67	67	67	67	67	67
1st mortgage 6s.	121	121	121	121	121	121
2d mortgage 7s.	121	121	121	121	121	121
Gen'l. mtg. 7s, coup	121	121	121	121	121	121
Gen'l. mtg. 7s, reg	121	121	121	121	121	121
Northern Central..	55	55%	54%	54%	54%	54%
5s.....	100	100	100	100	100	100
Northern Pacific...	47	46%	46%	46%	45%	45%
Preferred.....	82%	82%	81	81%	80%	80%
Pennsylvania R. R.	59%	59%	59	59%	59	58%
1st mortgage.....	59%	59%	59	59%	59	58%
Gen'l mort.....	59%	59%	59	59%	59	58%
Gen'l mort reg.....	59%	59%	59	59%	59	58%
Consol. mort. 6s.	59%	59%	59	59%	59	58%
Consol. mort. reg	59%	59%	59	59%	59	58%
Pa. State 5s, new...	59%	59%	59	59%	59	58%
do 4s, new.....	59%	59%	59	59%	59	58%
do 3 1/2s, 1912...	59%	59%	59	59%	59	58%
Phila. & Reading...	27%	26%	25%	25%	25%	25%
1st mortgage 6s.	120	120	120	120	120	120
7s of 1893.....	120	120	120	120	120	120
7s, new convert.	75%	75%	75%	75%	75%	75%
Consol. mort. 7s.	125%	125%	125%	125%	125%	125%
Consol. mort. reg.	125%	125%	125%	125%	125%	125%
Gen'l mort. 6s.	95	95%	95%	96	95	96%
Def. Income bonds	95	95%	95%	96	95	96%
Philadelphia & Erie	105	105	105	105	105	105
1st mortgage 5s.	112	112%	112%	112%	112%	112%
2d mortgage 7s.	112	112%	112%	112%	112%	112%
Pittsb., Cin. & St. L. 7s	120%	120%	120%	120%	120%	120%
Pitts., Tit. & Buff. 7s.	93%	93%	93%	93%	93%	93%
Schuylkill Navi't'n.	13%	13%	13%	13%	13%	13%
Preferred.....	13%	13%	13%	13%	13%	13%
6s, 1897.....	103	103	103	103	103	103
6s, 1907.....	89%	89%	89%	89%	89%	89%
United Co. of N. J.	190	191	191	191	191	191
Hestonville, (Horse)	15	15	15	15	15	15
Chestnut & Walnut.	15	15	15	15	15	15

## Baltimore Stock Exchange.

Closing Prices for the Week Ending Feb. 19.

	Tu.13.	W.14.	Th.15.	F.16.	Sat.17.	M.19.
Baltimore & Ohio...	200	200	200	200	200	200
6s, 1885.....	200	200	200	200	200	200
Central Ohio (\$50)...	110%	110%	110%	110%	110%	110%
1st mortgage.....	50%	50%	50%	50%	50%	50%
Marietta & Cincin'ti.	132%	132%	132%	132%	132%	132%
1st mortgage, 7s.	104	104	104	104	104	104
2d mortgage, 7s.	104	104	104	104	104	104
3d mortgage, 8s.	54%	54%	54%	54%	54%	54%
Northern Cen. (\$50)...	55	55	55	55	55	55
2d mort. 6s, 1885.	103%	103%	103%	103%	103%	103%
3d mort. 6s, 1900.	103%	103%	103%	103%	103%	103%
6s, 1900, gold.....	114%	114%	114%	114%	114%	114%
6s, 1904, gold.....	114%	114%	114%	114%	114%	114%
Pitts. & Connelsv. 7s.	121%	121%	121%	121%	121%	121%
Virginia 6s Consol.	51	51	51	51	51	51
Consol. coupons...	48	48%	48%	48%	48%	48%
10-40 bonds.....	40%	40%	40%	40%	40%	40%
Def'd Certificates.	40%	40%	40%	40%	40%	40%
New 3s.....	40%	40%	40%	40%	40%	40%
City Passenger R. R.	117	117	117	117	117	117

## London Stock Exchange.

Closing Prices

	Jan. 26.	Feb. 2.
Baltimore and Ohio 5s, 1927.....	107	108
Central of N. J., \$100 shares.....	70	70
Do. consol. mort.....	112	112
Do. Income Bonds.....	88	88
Central Pacific of Cal., \$100 shs..	86	86
Do. 1st mort. 6s, 1895-'98.....	116	116
Det., G'd Haven & Mil. Equip bds. 118	120	120
Do. Con. M. sp.c., till '83 after 6p.c. 117	117	117

Illinois Central \$100 shares.....	149 1/2	150 1/2	150	151
Do. S. F. 5s, 1903.....	105	107	105	107
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 94	96	96	95	97
Do. capital stock \$100 shares....	57	58	59	60
N. Y. Cen. & Hud. R. mort. bonds. 130	135	135	130	135
Do. \$100 shares.....	131	132	129 1/2	130 1/2
Do. mort. bonds (stg.).....	119	121	119	121
N. Y. Lake Erie & West. \$100 shs. 40 1/2	40 1/2	40 1/2	39 1/2	40 1/2
Do. 6 p. c. pref. \$100 shares....	84	86	84	86
Do. 1st Con. Mort. bonds (Erie). 130	135	135	130	135
Do. do. Funded Coupon bonds. 125	130	130	125	130
Do. 2d Consol. Mort. bonds....	99	101	99	101
Do. do. Funded Coupon bonds. 97	99	99	97	99
N. Y. Pa. & Ohio 1st mort. bonds. 57 1/2	58 1/2	58 1/2	56	57
Do. Prior Lien bonds (sterling). 103	106	106	103	106
Pennsylvania \$50 shares.....	62 1/2	63	62 1/2	62 1/2
General Mortgage.....	121	123	121	123
Phil. & Erie Gen. mort. 6s, 1920....	114	116	114	116
Philadelphia & Reading \$50 shs. 28 1/2	29	29	28 1/2	29
General Consol Mortgage. ....	115	117	115	117
Do. Improvement Mortgage.....	104	106	104	106
Do. Gen. Mtg. '74, ex-def'd coup. 95	97	97	95	97
St. L. Bridge 1st mort. gold bond. 122	124	124	122	124
Do. 1st. pref. stock.....	92	96	92	96
S. P'fic of Cal., 1st mort 6s, 1905-6. 107	108	107 1/2	107 1/2	108 1/2
Union Pacific 1st mtg. 6s, 1896-9. 116	118	116	116	118
Wabash, St. L. & P. \$100 shares....	34	35	33	35
Do. \$100 pref shares.....	56	57	54 1/2	56 1/2
Do. gen. mort. bonds.....	82	84	81	83

Pittsburgh, 18½; do. 1st, 104; do. inc., 44½; Richmond and Danville, 51½; do. debent., 59; do. 6s, 93½; Richmond, Danville and West Point, 26½; St. Louis, Alton and Terre Haute div. bonds, 71½; St. Paul and Duluth, 35; do. pref., 93; St. Paul, Minn. and Man., 134½; do. 1st, 109; do. 2d, 109; do. Dakota Ext. 1st, 108½; St. Louis and Iron Mt. 5s, 75; St. Paul and Sioux City 1st, 111; St. Louis and San Francisco genl. mort., 98; do. 2d, class B, 93½; Southern Pacific of Cal. 1st, 104½; South Pacific of Mo. 1st, 104; St. Louis and Iron Mt. 5s, 76; do. 2d pref. inc., 117½; Cairo and Fulton 1st, 108½; St. Louis, Kansas City and Northern, Omaha div. 1st, 109½; South Carolina 2d, 93; do. inc., 57; Toledo, Delphos and Burlington 1st, M. L., 52; Texas and Pacific, 37½; do. 1st, 106; do. inc. L. G., 56½; do. Rio Grande div. 1st, 79½; Toledo and Wabash Equip. bonds, 80; Utah Southern Ext. 1st, 100; Wabash, St. Louis and Pacific, genl. mort. 77½; do. Chicago div. 1st, 80½; do. Toledo, Peoria and Western 1st, 107½; Alabama, Class A, 81½; do. D, 83; Arkansas 7s, P. B. & N. O., 44; do. M. & L. R., 50; Georgia 6s, 1886, 106½; Louisiana consol. 6s, 98; American Cable, 65; Mutual Union Tel., 21½; Colorado Coal and Iron, 30; do. 6s, 80; Consolidation Coal, 27; Homestake Mining Co., 27½; Ontario, 21; Standard, 5½.

Boston.—Atlantic and Pacific blocks, 102; do. 6s, 92½; do. inc., 18½; Atchison and Nebraska 7s, 120; Atchison R. R. 4½s, 81; Boston, Clinton, Fitchburg and New Bedford, 55; Chicago, Burlington and Quincy 7s, 1890, 112; do. 4s, old, 86; do. Denver Ext. 4s, 83; do. S. W. div. 4s, 80; Chesire pref., 59½; Connotton Valley, 3; Cedar Rapids and Missouri River, 7s, 122½; Detroit, Lansing and Northern pref., 113; Flint and Pere Marquette, 25; do. pref., 98; Iowa Falls and Sioux City, 85½; Kansas City, Ft. Scott and Gulf, 78; do. pref., 120½; Kansas City, Topeka and Western 7s, 118; Kansas City, St. Joseph and Council Bluffs 7s, 112; Louisiana and Missouri River, 13; Little Rock and Ft. Smith, 32; do. 7s, 92½; Mexican Central, 20; do. 7s, 72; do. Block No. 3, 95; Marquette, Houghton and Ontonagon, 59; do. pref., 113½; Massachusetts Central 3; do. 6s, 20; New York and New England 6s, 105½; Portsmouth, Gt. Falls and Conway, 33; Rutland pref., 16½; Sonora 7s, 103½; Summit Branch, 6½; South Boston, Horse, 70½; Toledo, Delphos and Burlington Main Line inc., 13; do. Branch inc., 11½; Toledo, Cincinnati and St. Louis, 4; Vermont and Canada, 17½; Wisconsin Central, 19½; do. pref., 29; do. 7s, 1st series, 79½; Allouez Mining Co., 2½; Atlantic, 14; Franklin, 13; Osceola, 31; Pewabic, 9½.

Philadelphia.—Allegheny Valley, 5; Buffalo, New York and Philadelphia, 15½; Central Transp., 34; Northern Pacific pref. scrip, 81; Nesquehoning Valley, 53; Northern Central 5s, series B, 95½; Pittsburgh Water Loan 7s of 1875, 123; Philadelphia City 6s, 1894, 127; do. 6s, 1903, 133; do. 4s, 1903, 110; Philadelphia, Germantown and Norristown, 105½; Philadelphia and Reading R. R. scrip, 108; do. adj. scrip, 87; do. genl. mort. 7s, 101½; do. debent. 6s, 75; do. consol. mort., 5s, 1st series, 84½; do. Coal and Iron debent. 7s, 76; Philadelphia, Wilmington and Baltimore 4s, 105; Perkiomen 6s, 103; Susquehanna Canal, 7; do. 6s, 70; St. Paul and Duluth, 39½; West Jersey R. R., 49½; Western Pennsylvania 6s, Pittsburgh Branch, 106; Warren and Franklin 7s, 111. The latest quotations are: Pennsylvania State 5s, new loan, 117@117½; do. 4s, old, 110@112; do. 4s, new, 116@116½; Philadelphia and Reading R. R., 25½@25½; do. consol. mort. 7s, reg., 125@126; do. genl. mort. 6s, coupon, 96½@97; do. 7s, 1893, 120@122; do. 7s, new conv., 75@76; do. genl. mort. 7s, 101½@102; do. consol. mort. 5s, 1st series, —@85; do. 2d series, —@68; United New Jersey R. R. and Canal, 191@191½; Buffalo, New York and Phila., 15½@15½; Pittsburgh, Titusville and Buffalo 7s, 94@94; Camden and Amboy mort. 6s, 1889, 112@113; Pennsylvania R. R., 58½@59; do. general mort. 6s, coupon, 124@125; do. reg., 125@126; do. consol. mort. 6s, reg., 119@120; Little Schuylkill R. R., 58@59; Schuylkill Navigation pref., 13½@14; do. 6s, 1882, 89@90; Elmira and Williamsport pref., 58@59; do. 5s, 99@100; Lehigh Coal and Navigation, 38½@38½; do. 6s, 1884, 102½@103; do. R. R. loan, 7; 116@111 do. Gold Loan, 111½@112½; do. consol. 7s, reg., 118@118½; North Pennsylvania, 66@67; do. 6s, 103½@104; do. 7s, 120@—; do. 7s, General mort. reg., —@125; Philadelphia and Erie, 16@19½; do. 7s, 112@113; do. 5s, 104½@—; Minehill 63@—; Catawissa, 22@24; do. pref., 56@—; do. new pref., 54@—; do. 7s, 1900, 119@121; Lehigh Valley, 64½@65; do. 6s, coupon, 121@—; do. reg., 121½@—; do. 7s, reg., 133@135; do. consol. mort. reg., 122½@123½; Fifth and

Sixth streets (horse), 104@200; Second and Third, —@125; Thirteenth and Fifteenth, 76@80; Spruce and Pine, 43@48; Green and Coates, 76@77; Chestnut and Walnut, 89@90; Germantown, 65@70; Union, 110@—; West Philadelphia, 135@—; People's, 8½@8½; Continental, 100@103.

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## COMMERCIAL DEPARTMENT.

### THE MEXICAN TREATY.

On motion of Mr. Windom, in the United States Senate last Monday, the ban of secrecy was removed from our commercial treaty with the Mexican Republic and it has since been published in its entirety by the daily press. Of course the various provisions of the treaty will meet with objections on the part of many, but all necessity for further secrecy terminated with the signing of the treaty by the four commissioners, ex-President Grant and William H. Trescott representing the United States, and the Mexican Minister, Matias Romero and Estanislao Canedo acting in behalf of our sister republic. The treaty is a lengthy one, commencing with the customary preamble and enumerating the free imports each country will admit from the other.

The schedule of Mexican articles to be admitted free of duty into the United States of America is as follows:

Animals, alive, specially imported for breeding purposes; barley, not pearl; beef, coffee, eggs, Esparto and other grasses, and pulp of, for the manufacture of paper; flowers, natural of all kinds; fruits, all kinds of fresh fruits, such as oranges, lemons, pineapples, limes, bananas, plantains, mangoes, &c.; goatskins, raw; henequin, sisal hemp and other like substitutes for hemp; hide ropes, hides, raw or uncured, whether dry, salted or pickled, and skins, except sheepskins with wool on; Angora goatskins, raw, without the wool, and asses' skins; india rubber, crude and milk of; indigo, ixtle or Tampico fibre, jalap, leather, old scrap; logwood, berries, nuts, archil and vegetables for dyeing or used for composing dyes; molasses, palm or coconut oil; quicksilver, sarsaparilla, crude; shrimps and other shell fish, straw, unmanufactured; sugar, not above No. 16 Dutch standard in color; tobacco in leaf, unmanufactured; vegetables, fresh of all kinds; wood and timber of all kinds, unmanufactured, including ship timber.

The schedule of articles admitted free of duty from the United States into Mexico is somewhat more extensive and contains the following:

Accordeons and harmonicas; anvils; asbestos for roofs; bars of steel for mines, round or octagonal; barrows and hand trucks with one or two wheels; bricks, refractory and all kinds of bricks; books, printed, unbound or bound in whole or in the greater part with paper or cloth; beams, small and rafters of iron for roofs, provided that they cannot be made use of for other objects in which iron is employed; coal of all kinds; cars and carts with springs; coaches and cars for railways; crucibles and melting pots of all materials and sizes; cane; knives; clocks, mantle or wall; diligences and road carriages of all kinds and dimensions; dynamite; fire pumps, engines and ordinary pumps for irrigation and other purposes; faucets; fuse and wick, for mines; feed, dry and straw; fruits, fresh; firewood; fish, fresh; guano; hoes, mattocks and their handles; houses of wood or iron, complete; hoes, common agricultural knives without their sheaths; scythes, sickles, harrows, rakes, shovels, pickaxes, spades and mattocks for agriculture; henequin bags, on condition that they be used for subsequent exportation with Mexican products; ice; iron and steel made into rails for railways; instruments, scientific; ink, printing; iron beams; lime, hydraulic; locomotives lithographic stones; masts and anchors for vessels, large or small; marble in blocks; marble in flags for pave



ments not exceeding forty centimetres in square and polished only on one side; machines and apparatus of all kinds for industrial, agricultural and mining purposes, sciences and arts, and any separate extra parts and pieces pertaining thereto.

The extra or separate parts of machinery and the apparatus that may come united or separately with the machinery are included in this provision, comprehending in this the bands of leather or rubber that serve to communicate movement, but only when imported at the same time with the machinery to which they are adapted; metals, precious, in bullion or in powder; money, legal, of silver or gold, of the United States; moulds; patterns for the arts; naphtha; oats in grain or straw; oars for small vessels; ploughs and ploughshares; paper, tarred for roofs; plants and seeds of any kind not growing in the country, for cultivation; pens, of any metal not silver or gold; petroleum, crude; petroleum or coal oil and its products for illuminating purposes; powder, common, for mines; quicksilver; rags or cloth for the manufacture of paper; roof tiles, of clay or other material; sulphur; stoves of iron for cooking and other purposes; staves and headings for barrels; soda, hyposulphite of; steam engines, sewing machines, slates for roofs and pavements; sausages, large or small; teasels of wire, mounted on bands for machinery or vegetable teasels; tools and instruments of steel, iron, brass or wood, or composed of these materials, for artisans; types, coats of arms, spaces, rules, vignettes and accessories for printing of all kinds; vegetables, fresh; wire, telegraph, the destination of which will be proven at the respective custom houses by the parties interested; wire of iron or steel for carding, from No. 26 upward; wire, barbed, for fences and the hooks and nails to fasten the same; water pipes of all classes, materials and dimensions, not considering as comprehended among them tubes of copper or metal that do not come closed or soldered with seam or with riveting in all their length; window blinds, painted or not painted.

The remainder of the treaty relates to the powers of the two countries to protect themselves from fraud in the import of articles above mentioned manufactured in other countries, the liberty on the part of either of the high contracting parties to enter into similar treaties with other nations and to the question of transit duties. The concluding clauses relate to the ratifications of the treaty which are to be exchanged within twelve months from the date of signing, January 20th, of the present year.

There will naturally be some discussion relative to the treaty, and opinions may differ as to its merits, these differences being generally based upon personal interests, while the present agitation of the tariff question may have some bearing upon the ratification of the treaty by the two republics. It is difficult at this early stage of the proceedings, when the provisions of the document have just been made public, to prognosticate the action Congress will take upon the conclusions reached by the joint commission.

#### THE FUTURE COURSE OF PRICES— LAND AND FIELD PRODUCE.

RESPECTING the tendency of the overflow of population from the densely settled countries in Europe to find its way to the new and unsettled lands of the Western Hemisphere, Mr. GIFFEN's studies from our Census

statistics, referred to in our last issue, are instructive and important. He shows that while there is a considerable aggregation both of native-born and European-born people to cities and towns, there is still a wide field to be occupied by rural population.

The obvious lesson which these figures teach is plain: that Europe must, more and more, continue to be fed and clothed by America, not to speak of the exportation of timber for sheltering and manufacturing purposes. The balance of population, the balance of power, and the balance of trade are gradually being shifted from what is called the Old World to the New, and before the twentieth century is far advanced (if we can only keep from internecine strife) we may witness a transfer of wealth and political and social power such as has not occurred for more than a thousand years in the world's history.

There is less expanse of good land available in the United States than the dry figures would lead one to suppose who is not familiar with the great arid plains lying between the 100th meridian and the Sierra Nevada range—fully one-third of the entire territory of the United States. To double or treble the present population upon the good lands, must lead to a corresponding increase in values, which will have a slight tendency to increase the cost of producing cereals, meats and food supplies of all kinds. The time is near when wild unfenced land will not be available for the grazing of herds or the sowing of wheat, and which now competes so severely with European grain, as much, or more, will be raised by a more numerous population, but the cost will be slightly enhanced by the increased value of the soil.

#### DISTRIBUTION OF SETTLEMENT.

The total area of the United States, according to the last census, exclusive of Alaska, is given as 3,025,600 square miles, of which there is a land surface of 2,970,000 square miles. Of this the portion belonging to each of the three groups named, with the quantities of each, respectively, taken for settlement, is as follows, the figures being worked out from the data of area and population as given by the last census:

#### AREA OF UNITED STATES AND AREA TAKEN FOR SETTLEMENT, IN THREE GROUPS.

	Total Area. Square Miles.	Area Taken for Settlement. Square Miles.
GROUP I. Thirteen to sixteen original States.....	393,000	362,000
GROUP II. Twelve Western and Southern States*.....	605,000	560,000
GROUP III. Remaining States and Terri- tories:		
a. Six far West States†.....	620,000	370,000
b. Pacific States and Terri- tories‡.....	1,407,000	277,000
Total.....	2,027,000	647,000
Grand total.....	3,025,000	1,569,000

\*Viz., Kentucky, Tennessee, Ohio, Indiana, Illinois, Michigan, Missouri, Arkansas, Louisiana, Mississippi, Alabama and Florida.

†Viz., Iowa, Wisconsin, Minnesota, Kansas, Nebraska, and Texas.

‡Viz., California, Oregon, Dakota, Colorado, Nevada, Arizona, Idaho, Montana, Wyoming, Utah, New Mexico, and Washington.

Thus, out of the total area of three million odd square miles, rather more than one-half is the area taken for settlement; and the area not for settlement is almost exclusively in the last group of all. This group I have subdivided into two sections, the first comprising States like Iowa and Minnesota, more or less completely settled, and the second comprising the Pacific States and Territories; and of the first subsection, it will be observed, more than half is already included in the area taken for settlement. The question then arises. How much of the unsettled portion is available for settlement? and to this the answer must be—little. When I mention that Mr. Porter, the well-known American statistician, and one of the Tariff Commission, in his book on "The West," estimates that there are 1,400,000 square miles of territory in the West, of which only a tithe will ever be available for cultivation, it will be seen that the wholly unoccupied portion of the available territory must now be reduced to very small dimensions.

The next point to which I draw attention is the actual population of the first two groups, exclusive of the town population, and the proportion to the square mile. This figure I work out from the tables at pp. 26-31 of the Introduction to the Population Statistics of the United States Census:

#### NET RURAL POPULATION OF THE UNITED STATES, EXCLUSIVE OF THE TOWN POPULATION, IN DIFFERENT GROUPS OF STATES, WITH THE NUMBERS PER SQUARE MILE.

	Total popu- lation.	Town population.	Net rural population.	No. per Sq. Mile of Rural popul'n.
Group I.....	21,835,111	7,939,334	13,895,777	35
Group II.....	19,656,666	3,014,835	16,041,831	26½
Group IIIa.....	6,761,132	847,282	5,913,850	9½
Group IIIb.....	1,902,874	534,659	1,368,215	1
Total of III..	8,664,006	1,381,941	7,282,065	..
Grand total...	50,155,783	12,936,110	37,219,673	12

Thus, while the rural population in the thirteen original States is 35 per square mile, it amounts to no less than 26½ per square mile in twelve other States which we are accustomed to speak of as more or less unoccupied. This is clearly not the case. An addition of 8½ per square mile, or of little more than 5 millions in all, would make them as populous as the rural parts of the original States. Group IIIa, though it has a larger area to fill up, would nevertheless become as populous per square mile rurally as the older group of States, by an addition of about 15 millions of population. It appears, however, that a large part of this area belongs to the rainless region; so that probably less than two-thirds of this 15 millions would fill up the available area to the limit of the thirteen original States. There remains only the last division of all; but it would seem that the available area here cannot be put at more than 400,000 square miles, on which the present rural population would be about 3 per square mile; so that, if the population grows to the limit of the older States, the addition to the population necessary would be about 10 to 12 millions only. Altogether an addition of about 20 to 25 millions to the rural population of the United States—viz: 5 millions to second group, 10 millions to group IIIa, and 10 mil-

ions to group IIIb—would seem all that is required to occupy the available area in the same way that the oldest and most settled part is now occupied. When that point is reached the present conditions of expansion must begin to change.

#### TWENTY-FIVE YEARS AHEAD.

There is still another way of looking at the matter. During the decennial period 1870-80, the increase of population in the United States was about equally distributed between the three groups—about 4 millions to each, the increase in the first group being, however, mainly in the cities. Assuming an equal division of the fifty millions additional population which will be on the territory of the United States in twenty-five years—and it is more likely that the Western States will have a larger proportionate share—this would give 16 millions more to the second group, or 11 millions more than is necessary to fill up the rural districts to the level of the Eastern States, and 16 millions to the third group, which would suffice to fill the rural districts to the Eastern level. Even looking at the matter in this way, then, the prospect is that the available area in the United States will be peopled up to the level of the thirteen original States, as regards the rural population, in the course of twenty-five years. But the distribution of the increase between the groups, as I have said, is likely to be unequal, and the West will probably be filled up with even greater rapidity. To look at the matter in yet another aspect: Of the 50 millions additional population, assuming an increase of the town population like what has been going on in the past, about 12 millions will be a town population, leaving 38 millions as the rural increase. But unless rural population is to increase in the original States, and is also to increase in the second group to more than the present level of the original States, the whole of this 38 millions, except the 5 millions required for the growth of rural population in the second group to the level of the original States, will be left for the occupation of the available area in the third group, or double what is required. Whatever way we look at the matter, then, it seems certain that in twenty-five years' time, and probably before that date, the limitation of area in the United States will be felt. There will be no longer vast tracts of virgin land for the settler. The whole available area will be peopled agriculturally, as the Eastern States are now peopled.

#### THE NARROW LIMITS OF EXPANSION.

It will be urged that it is notorious the United States can support enormous masses of population. Its available agricultural area in round figures is twelve or thirteen times that of the United Kingdom, and eight times that of France. Considering what the population of the United Kingdom or that of France is, and the superior fertility of many tracts of the United States, it appears safe enough to assume that the United States can support an indefinite increase of population, and that there is room for great expansion of population within the settled area. But assuming all this to be the case, what we may observe is that it is not quite to the present point. This is not a question of supporting a large population anyhow;

how they are to be supported is here all important. The moment there is little new land to occupy, the conditions of expansion must change; every year must bring nearer the date when the fruits of the soil will be extracted with increasing difficulty. The agriculture must become different from what it is now. What has been already said, moreover, as to the United Kingdom and France not supporting all their own population, and as to what the position in the United States would be, even as compared with the United Kingdom and France, if the geometric increase in the United States should continue no more than a century, may show that there is, after all, no room for an indefinite expansion of population within the settled area in the United States. I should like to go further, and suggest that the limits of such expansion, without a very great and almost inconceivable change in the agriculture itself, must be very narrow. Comparisons with European States on this head seem very apt to mislead. But the figure of 35 per square mile as the rural population of the older parts of the United States is, after all, one-fourth of the agricultural population of France per square mile; and there are two important differences between the agriculture of France and the United States: 1. The consuming power of the United States population is much greater, perhaps double that of the French population, so that the soil cannot be expected to support the same number of Americans as French. 2. The Western farmer in the United States grows for export, not merely to the towns of the country, but abroad. A rural population one-fourth that of France may thus be quite sufficient to settle up the country. We must not come to the subject with European ideas as to the scale of living.

#### ECONOMIC CONDITIONS FUNDAMENTALLY ALTERED.

It would be foreign to my purpose to indulge in speculation as to what will be the consequences of this approach to a complete settlement of the United States, coupled with the fact that population, whether in the United Kingdom, or in Germany, or in the United States, shows no signs of abatement in the rate of increase. It is sufficient for my purpose to point out that as the existence of vast tracts of virgin soil in the United States has permitted, during the last hundred years, an expansion of the European population without a precedent in history, has made the economic history of Europe in that period entirely different from what it would otherwise have been, so now the approach to a complete settlement must profoundly affect the world. The conditions of economic growth will be fundamentally altered. Possibly there may be chemical or other inventions rendering possible great improvements in agriculture, which will have practically the same effect as an increase of the quantity of new land available. Possibly we may have the rate of growth of population itself checked. But with the change of one condition others must change, if the masses of European people are to remain at their present level of prosperity. If there is no change, the nature of the difficulties that will arise is obvious; the masses of laborers will have to contend against a fall in the scale of living.

But while I refrain from indulging in general speculation, I may perhaps be allowed to point out some of the more immediate consequences which are likely to follow from an approach to complete settlement in the United States, of which we seem to be within a measurable distance. First of all there will probably be a diversion of a larger part of the stream of emigration from Europe and the Eastern States of the American Union to the Northwest provinces of Canada. Here there are probably about 400,000 square miles of territory available for settlement, equal in quality to the best land in the United States West. As there is no such field in the United States itself, the stream must apparently be to the new land. The second immediate consequence I should look for would be an increase of manufactures and of town population in the United States. The agricultural outlet becoming less tempting, and agricultural wages tending to fall, the population will inevitably be more and more largely drawn into manufacturing. And a third consequence will probably be a check to the tide of emigration from older countries, a greater demand upon the agriculture of those countries, or at least a mitigation of the extreme competition it now sustains from virgin soils, and possibly a reversal of the present tendency for rents to fall. Such changes may hardly be apparent for a few years, with the exception, perhaps, of the diversion of the stream of emigration to the northwest of Canada, which has begun; but it seems hardly possible to doubt that they must begin to be felt before very long—perhaps in the course of ten, and almost certainly in the course of twenty, years.

#### Commerce of New York.

The foreign imports at New York for the month of January were:—

	1881.	1882.	1883.
Ent. for cons.....	\$15,361,813	\$22,225,385	\$19,505,297
Do. for warehouse.....	5,740,490	7,259,501	8,774,434
Free goods.....	10,259,629	10,276,143	11,364,889
Specie and bullion..	4,723,427	374,584	605,523

Total ent. at port....	\$36,085,359	\$40,135,673	\$40,250,143
Withdrawn from warehouse.....	7,852,224	7,676,385	8,237,803

The foreign imports at New York for seven months ending January 31, were:—

	1881.	1882.	1883.
Ent. for cons.....	\$17,044,725	\$142,307,921	\$146,833,649
Do. warehouse.....	51,108,571	45,092,925	56,919,625
Free goods.....	73,294,615	78,410,405	79,134,782
Sp. and bullion ...	75,317,903	26,662,882	6,349,546

Total en. at port..	\$136,855,874	\$292,411,133	\$289,237,602
Withdrawn from warehouse.....	60,763,735	56,993,578	59,035,489

The duties received at New York for the seven months ending with January were:—

	1880-'81.	1881-'82.	1882-'83.
In July.....	\$13,360,394 37	\$12,079,573 95	\$13,730,752 87
In August....	14,492,361 87	15,205,469 58	16,483,260 62
In September	12,856,636 10	14,104,647 51	14,690,362 74
In October....	10,574,333 53	13,011,426 27	13,095,876 47
In November	9,079,082 36	9,711,039 46	9,938,679 71
In December	9,230,734 57	10,972,321 38	10,380,192 56
In January..	10,572,559 15	13,387,515 96	12,574,837 84

Total 7 mos..	\$80,166,101 95	\$88,470,994 11	\$90,893,962 81
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The exports from New York to foreign ports for the month of January were:—

	1881.	1882.	1883.
Dom. produce.....	\$28,256,320	\$26,904,780	\$27,784,652
For. free goods.....	1,308,767	424,582	608,839
Do. dutiable.....	429,832	459,372	497,458
Specie and bullion..	1,034,514	1,270,411	1,390,700

Total exports.....	\$31,299,433	\$29,119,175	\$30,281,649
Do. exclusive of specie.....	30,264,919	27,848,734	28,890,949

The exports from New York to foreign ports, for seven months ending January 31, were:—

	1881.	1882.	1883.
Dom. produce.....	\$244,202,820	\$207,868,960	\$210,424,556
For free goods....	3,419,280	3,732,679	3,962,496
Do. dutiable.....	3,482,169	3,383,944	3,274,265
Sp. and bullion....	5,683,815	7,541,490	13,492,373

Total exports.....	\$256,788,184	\$222,527,083	\$231,153,684
Do. exclusive of specie.....	\$251,104,268	\$214,985,593	\$217,661,311



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## MISCELLANEOUS.

[Written for the American Railroad Journal].

## Conversion of Wind-Power into Electricity, and its Adaptation to the Propulsion of Railway Trains.

BY W. L. SILVEY.

THAT the adaptation of electricity to practical purposes is assured, and that its employment for railway propulsion is now being pushed with vigor, I am well aware; therefore let me advance the following idea, which, although new and novel, may interest a large class of your readers and may be adapted to practical purposes. That natural forces are the most prolific sources of power, no one pretends to deny, and that wind-power is one of our most economical sources of motive-energy the example of four thousand years has fully demonstrated. However, the efficiency of wind-power as a motor depends upon the form of machinery used to collect its energy. This can be considered in the light of frictional power, that is to say the more surface there is exposed to the direct action of the progressive wind-current the greater friction will be exerted; hence the greater efficiency of the apparatus used to collect and direct the wind energy to practical useful purposes. Therefore the wind engine, windmill, or whatever name they assume, exposing the greatest frictional surface on one side with but little friction on the other, is undoubtedly the machine best suited to the purpose in view. After power is acquired, it is little trouble to find use for it, and, as my subject indicates, I propose to adapt wind power to railway purposes. The transmission of power to a distance through its conversion into electricity being a demonstrated fact, puts wind power into an attitude of success never before attained.

The plans which I propose for the accomplishment of the end in view are as follows: Along the line of railroad, at suitable distances, wind-engines are to be located, arranged expressly for the purpose of converting wind-power into electricity, which is to be employed expressly for driving the trains. Let the wind-engines be connected to electric generators or dynamo-machines in such a way that the generator will be entirely cut out of the electric circuit until a sufficient speed has been attained at each starting of the machine or with each successive wind current. The reason for this is apparent, for until the generator is going at a speed at which high tension currents are generated, the current which would be liable to flow out of the line into the machine would reverse its magnetism. The electric current from the generator may be applied directly to the rails, one wire going to each rail and by suitable brushes or connectors direct to the electric motors on the train; or where very intense currents are to be employed, or extra insulation is required, an overhanging wire may be used for the conveyance of one current and the rails for the return of the current. To accomplish this it will be found quite easy to attach brushes to

the top of the car, so arranged as to pick up the overhanging wire or take the current therefrom, and after conveying it through the electro-motors on the cars, release it through the wheels and rails to return and complete its circuit.

This plan, which would work well on short circuits or where a very few generators are used, would, when adapted to long lines or where several generators are employed, require to be slightly modified. The following arrangement will evidently work well in such cases: Instead of using the current direct from the generator for driving the trains, let it be stored in accumulators situated at each station, to be released into the line as needed, upon a given signal from the train, and in this way a current suitable to the load can be readily applied. Moreover, on this plan the line may be divided into sections, with a generator attached to each section, which entirely obviates the possibility of the action of one current interfering with another. It is a known fact that an electro-motor may become an efficient electric generator if driven at a speed above its normal capacity; hence the cars in descending a grade will drive their motor at a high speed and the electric current thus generated will flow back into the accumulators to be used when greater power is needed or by other trains. In cases of steep gradient, a separate motor may be attached to each car, which is a very great advantage over our present system of locomotion, where an engine at one end of the train must do all the work, while if a certain part of the work is performed at several points on the train a great saving of power is effected. More than this, the train may be heated and lighted from the same source as that which furnishes the power for driving it; and in case of wrecks or railroad disasters, all danger of conflagrations or explosions would be avoided, for as soon as the wheels leave the track the current would cease to flow; hence the entire danger would be obviated.

That we already have wind-power to accomplish the desired end is proven by a reference to Holland, where hundreds of windmills are constantly in use for pumping water to prevent inundation, and to dry the lakes which are being reclaimed from the sea. China also furnishes an example, where wind-power is used in irrigation and for propelling wagons across their level plains. All that we now need is to select some efficient wind-engine in connection with a good electro-motor and generator to make such an electric railway a practical and economical success.

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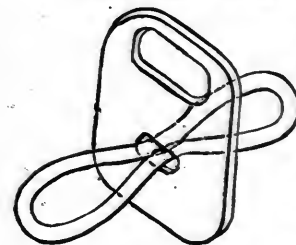
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North. and Northwestern: C. W. Postlethwaite, Toronto, Ontario.  
Northern Central: A. W. Sumner, Baltimore, Md.  
Northern Pacific: John H. Ames, St. Paul, Minn.  
Northern Pacific (West Div.): H. D. Sanborn, Portland, Oregon.  
Northern Transit Co.: W. W. Butler, Port Huron, Mich.

Ohio and Mississippi: G. E. Atwood, Cincinnati, O.  
Ohio Southern: H. C. Norton, Indianapolis, Ind.  
Old Colony R. R. and S. B. Co.: R. W. Husted, Boston, Mass.

Pennsylvania: Enoch Lewis, Philadelphia, Pa.  
Pennsylvania Co.: Wm. Mullins, Pittsburgh, Pa.  
Petersburg: L. E. Clark, Petersburg, Va.  
Phila. and Reading: W. S. Wilson, Philadelphia, Pa.  
Pitts., Cincin. and St. Louis: Wm. Mullins, Pitts., Pa.  
Providence and Springf.: W. Tinkham, Providence, R. I.

Richmond and Allegheny: M. Sweeny, Richmond, Va.  
Richmond and Danville: J. P. Minetree, Richmond, Va.  
Richmond, Fred. and Potomac: T. L. Courtney, Richmond, Va.  
Rochester and Pitts.: G. E. Merchant, Rochester, N. Y.  
Rome, Watertown and Odgens.: G. W. B. Cushing, 26 Ex. Place, N. Y.  
Do. (Lumber and Oil): W. D. Hager, 26 Ex. Place, N. Y.

San Francisco and N. Pac.: P. E. Dougherty, San Francisco, Cal.  
Savannah, Florida and West: A. A. Aveilhe, Savannah, Ga.

St. Paul and Duluth: J. G. Callahan, St. Paul, Minn.  
St. Paul, Minn. and Manitoba: J. C. Morrison, St. Paul, Minn.

St. Louis and San Francisco: A. G. Thompson, St. Louis.  
St. Louis, Han. and Keokuk: G. Douglas, Hannibal, Mo.  
St. Louis, Iron Mt. and So.: R. B. Lyle, St. Louis, Mo.  
St. Louis, Salem and L. Rock: H. A. Crawford, St. Louis.  
St. Louis, V. and T. H. Ind.: C. R. Peddle, Terre Haute, Ind.

San Pete Valley: J. E. Bamberger, Salt Lake City, Utah.  
Seaboard and Roanoke: J. A. Walton, Portsmouth, Va.  
Shenandoah Valley: W. C. DeArmond, 37 and 39 S. 4th st., Phil., Pa.

South Carolina: S. B. Pickens, Charleston, S. C.  
Syracuse, Geneva and Corning: A. Beers, Corning, N. Y.

Texas and Pacific: R. B. Lyle, St. Louis, Mo.  
Texas and St. Louis: F. W. Paramore, St. Louis, Mo.  
Texas Mexican: John Dougherty, 47 William st., N. Y.  
Toledo, Ann Arbor and Gd. Trunk: H. W. Ashley, Toledo, O.  
Toledo, Cin. and St. Louis: J. H. F. Wiers, Toledo, O.  
Toronto, Grey and Bruce: W. Watson, Toronto, Can.  
Troy and Boston: D. Robinson, Troy, N. Y.

Union Pacific: A. D. Clarke, Omaha, Neb.  
Utah Cen. and South.: S. H. Hill, Salt Lake City, Utah.

Vicksburg and Meridian: R. W. Healy, Cincinnati, O.  
Vicksburg, Shreveport and P.: R. W. Healy, Cincinnati, O.  
Virginia and Truckee: C. P. Mason, Carson City, Nev.

Wabash, St. Louis and P.: W. S. Lincoln, St. Louis, Mo.  
West Jersey: Enoch Lewis, Philadelphia, Pa.  
West North Carolina: G. P. Erwin, Salisbury, N. C.  
Worcester and Shrewsbury: G. E. Hapgood, Worcester, Mass.  
Wisconsin Central: G. Campbell, Milwaukee, Wis.

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[Mention this paper.]

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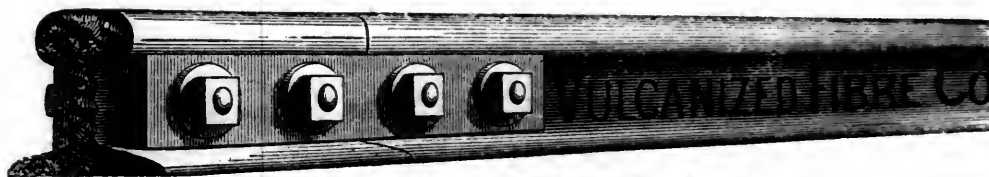
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## STREET RAILWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editor. All communications should be accompanied by the name and address of the writer.]

### Street Railways at the Chicago Exposition.

We propose in our next issue to devote considerable space to a prospectus of the approaching National Exposition of Railway Appliances which opens at Chicago in May next; and at present we will simply outline that feature of the display which affects street railways. The merits of street roads to a full opportunity for exhibition have been freely admitted by the board of managers, and "Department I" of the exposition will be devoted entirely to Street Railway Appliances. In this department there will be one gold, eight silver and eighteen bronze medals awarded. We append the premium list as copied from the secretary's published book of regulations:

Best Iron Wheel.....	Silver Medal
Best Combination Wheel.....	Silver Medal
Best Rail.....	Silver Medal
Best Rail Joint.....	Silver Medal
Best Car.....	Gold Medal
Best Car Spring.....	Silver Medal
Best Draw Spring.....	Bronze Medal
Best Street Car Gong.....	Bronze Medal
Best Bell Cord and Fixtures Complete.....	Bronze Medal
Best Fare Box.....	Silver Medal
Best Center Lamp.....	Silver Medal
Best End Lamp.....	Bronze Medal
Best Hand Rail Bracket.....	Bronze Medal
Best Hand Rail Socket.....	Bronze Medal
Best Journal Bearing.....	Bronze Medal
Best Door Locks.....	Bronze Medal
Best Window Fixtures.....	Bronze Medal
Best Window Blinds Complete.....	Bronze Medal
Best Registering Punch.....	Bronze Medal
Best Registering Device.....	Bronze Medal
Best Track Cleaner.....	Silver Medal
Best Sheave for Sliding Door.....	Bronze Medal
Best Change Gate.....	Bronze Medal
Best Door Hook and Plate.....	Bronze Medal
Best Door Handle.....	Bronze Medal
Best Door Roller.....	Bronze Medal
Best Hame Bell.....	Bronze Medal

It will be seen that this list has been carefully selected with a view to a display of Street Railway appliances, and awards are made varying in value as the appliance may vary in importance. The gold medal is properly to be awarded to the best car; the silver medals to the appliances of the most practical utility; while the bronze medals are designed to stimulate improvement in the minor details of street railway appurtenances, but merit only will not be recognized in such appliances as are named in the abovelist. According to Rule II, Section 1, "articles may be entered either in 'competition' for medals, or for 'exhibition only,' at the option of the exhibitor. The Premium List is not intended to exclude proper articles not named therein, but such will be received for exhibition and assigned space, and, if entered for medals, will be assigned to proper "classes," and examined by the jurors with a view to the same recognition by the Board as if named in the list." The managers have simply indexed the most urgent needs of street railways, but the inventor is allowed every latitude to exercise his skill and ingenuity to further the interests of street roads, and no meritorious appliance will go unrewarded.

It is not only in Department I that street railways have a special interest. Medals are

awarded in nearly all the remaining departments, which have either an immediate or secondary bearing upon improvements in street road appliances. In Department A devoted to rolling-stock, there are many medals awarded for appliances that may be used in common by steam and horse railroads. The same is true regarding Departments B of Machinery, C, of Trade Goods; D, of Metals; G, of Oils, Varnishes and Paints, and in Department H, devoted to Miscellaneous appliances. There are over a hundred exhibits contemplated, which are of the greatest interest to street railway managers, and considering the liberal number of awards made, and the general scope allowed inventors, it will be a matter of surprise if there is not a good attendance of these gentlemen at the exposition. Since the newly formed American Street Railway Association have fixed upon Chicago as their next place of meeting it is to be regretted that they did not select a date which would enable them to hold their annual convention simultaneously with the approaching display, thus enabling the members to accomplish a two-fold purpose in visiting Chicago, and assuring the association a large attendance at the meeting.

Further information regarding the exposition will be published in another portion of our next issue, while those who desire additional particulars will, we presume, have no difficulty in ascertaining them by applying to the Secretary, E. H. Talbott, whose address is the Grand Pacific Hotel, Chicago, Ill.

### Reduction of Fares.

It was extensively rumored last week that upon the passage of the bill to reduce the fares upon the elevated roads in this city to five cents, the managers of the surface roads would follow this action by reducing the fare upon the street cars of New York City to four cents. This rumor has since been authoritatively denied, and we are glad to know that it was groundless. There is no call for such a step as this, which would reduce the revenue of street car companies twenty per cent, while they would gain little or no addition to their passenger travel. The reduction made some years ago from six to five cents was a wise action, since a fare was adopted that avoided the necessity of changing money to obtain a perplexing odd cent, and at the same time lessened the expense of horse car travel, but a four-cent fare would revive the old nuisance of making constant change, while there is certainly no call for a reduction on the ground of overcharge. The Street Railway companies can safely maintain the old fare despite the passage of the elevated road bill, for a certain class of travelers will always patronize the surface roads. Invalids and aged persons who would avoid climbing the stairs leading to the elevated stations, persons who wish to ride to particular points midway between the two stations of the elevated roads and timid people who dislike to face the real or fancied dangers of the aerial structures. In stormy weather this number is greatly augmented by others who desire to avoid as much walking as possible, and will sacrifice a little time in order to be conveyed to a spot nearer

their residence or place of business than the elevated road could carry them. If instead of reducing fares the managers of street railways will increase the facilities for the comfort of their passengers, add to the number of their smoking-cars, a luxury the elevated roads do not boast, and enforce punctuality in their trips, they will easily maintain a satisfactory showing as to the number of their passengers, and possibly win over many of the present patrons of their elevated rivals.

### A New System of Heating Street Cars.

Of late considerable attention has been paid to the subject of heating street cars, and several letters upon the subject have of late appeared in the AMERICAN RAILROAD JOURNAL. The public, believing it to be possible to heat the cars, have complained of the discomforts of a ride in the cars of the surface roads, and have come almost to demand that all should be heated. The street car companies, in this city particularly, have begun to realize that by heating the cars they could retain more of the traffic, which now naturally seeks the warmed cars of the elevated roads. In some cities on lines which run for considerable distances into the suburban districts stoves have been used in the cars during the winter months for several years, but this method of heating had several objections. Inventors have devoted much time and thought to the subject, and a number of good systems have been devised, but in almost all of them the trouble has been that while one or two seats were warm—sometimes uncomfortably hot—the car was not warmed, so that by far the larger proportion of the passengers received no benefit from what heat there was.

Our representative has examined a method of heating as applied to several of the cars of the Third Avenue Railroad in this city, which would seem to have actually and fully overcome all the difficulties and objections to the other car heaters. This method, as introduced by the New York Car Heating Company, whose office is in the Equitable Building, 120 Broadway, consists of a pipe laid on each side of the car, under the seats, at the feet of the passengers (where heat is required), running the whole length of the car. These pipes are filled with a compound which possesses the quality of receiving heat rapidly to an unusual degree, and of dispensing or radiating it slowly for a long time. They are so arranged that by connecting with a flexible steam pipe on the outside of the car a jet of steam is passed through them and the compound heated in a few minutes to any desired temperature. The heat thus stored is gradually diffused through the entire car, and an agreeable, uniform temperature maintained for several hours. Any degree of temperature required can be secured. The steam is supplied by an ordinary boiler at the depot, and it has been demonstrated beyond all question that a car may be warmed in the depot; and during a trip requiring over two and a half hours the temperature be maintained at approximately the same degree as when the car left the depot. The car on which the tests have been made was No. 143 of the

Third Avenue Railroad, and an accurate record of the temperatures was kept and may be seen at the New York Car Heating Company's office. This record shows that in ninety-one trips made during the first twenty days the temperature of the car upon arriving back at the depot at Third avenue and One Hundred and Thirtieth street was upon an average less than one degree below what it was on starting on the down trip—the trip requiring two hours and forty minutes—while in several instances the temperature was actually higher at the end than at the beginning of the trip. This can be accounted for only by the fact that as the car neared the end of the trip there were fewer passengers to get off, and so the doors were not so frequently opened. On the trip on which our representative was a passenger the temperature on starting was 42 degrees Fahrenheit, at Sixty-fifth street 48, at Sixth street 48, at City Hall 48; and returning, at Sixth street 46, at Sixty-fifth street 44, and at the depot at One Hundred and Thirtieth street 42—exactly as it started. The outside temperature that day was 16 degrees. Of course there was and could be no offensive odors, as is so frequently the case where a stove is used, and there was no possibility of danger in case of a "smash up." It will be well worth the while of any one interested in street railways or in the subject of car heating, to take a trip in one of the warmed cars on the Third Avenue line. The cars which are equipped with this system may be identified by a card in the window bearing the words "Warm Car," and the initials "N. Y. C. H. Co." This method of heating could be applied on the elevated roads, doing away with the terrible cold of the first trip—for scarcely any one who has had occasion to ride down on one of the early trips has failed to have reasonable ground for complaint on this score.

This method has been examined and tested by some of the ablest engineers in the country, and has received their warmest commendation and endorsement. The Third Avenue Railroad has shown commendable enterprise in being first to introduce this system, but has been promptly followed by the De Kalb Avenue Railroad of Brooklyn, which is now having a number of new cars fitted up with it.

We would advise every railroad official desirous of furnishing comfortable cars for the traveling public to thoroughly investigate this new and novel system. The Car Heating Company will be glad to show the results already obtained and give explanations at its office, 120 Broadway, New York City.

#### STREET RAILWAY NOTES.

THE Committee on Street Railways, of Boston, Mass., met last week to hear Mr. Prentiss Cummings, on the petition of the Cambridge Railroad Company that it may have authority to issue bonds to be secured by mortgage of its franchise and property, and on an order looking to the expediency of so amending the public statutes that street railroads may have, as steam railroads have, the right to emit bonds on mortgage security. He pointed out that under the present Massachusetts laws hereafter property is not covered by a mortgage already

issued, and that a street railroad company borrowing money on mortgage would be liable to criminal prosecution in disposing of any of its live-stock, while by the gradual changes of time the property covered by such mortgage would wholly disappear. He asked, therefore, for authority for the company to give a lien on the horses that it may purchase to make good its stock. He submitted drafts of an act authorizing their issue, adding that the Cambridge Company desires to raise \$600,000 to complete its payment to the Union Company, with which it has recently consolidated, and that it would issue bonds to the amount of \$1,000,000, its capital stock being \$1,600,000. The committee also heard Mr. Cummings on the petition of the Somerville Street Railroad Company, the Middlesex Railroad Company, the Union Railroad Company and the Cambridge Railroad Company, for ratification of certain contracts affected by the consolidation of the Cambridge and the Union roads.

WITH the approach of Spring, and the consequent abatement of cold weather, the vexed question of street car heating "goes on" until next Fall when it will be revived with new vigor. The public benefactor is yet to appear who will devise a system of heating street cars that may be readily employed and give satisfaction to both the railway companies and their passengers. We propose to devote some attention to this subject, and would be glad to receive the practical views of practical railway men which may bear upon the question of street car heating. In this connection we call the attention of our readers to the article published above, entitled "A New System of Heating Street Cars."

CITY REGISTER ROBB, of Baltimore, has determined to make an effort to secure the immediate payment of the amounts due by the several street railway companies for park tax. The Baltimore City Passenger Railway Company and the York Road Railway Company have paid up in full. The Monumental and People's lines have never paid anything, and judgment has been secured against the People's line for \$2,379.42, and against the Monumental line for \$1,472.38. Each line will owe for another quarter in March. The Citizens' line owes for two quarters now, the North Baltimore one quarter and the Union line for two quarters. The total is a considerable sum, and the money is needed by the park commissioners to meet the current expenses of the parks.

MANY of the street railroad companies of Newark, N. J., have forwarded their annual statement to Trenton, as required by law. The Orange and Newark Company, the largest in the State, has filed no statement, but judging by those submitted by the other roads, the street railways of Newark have conducted a prosperous business during the past year. The uniform reduction of fares within the city limits from six to five cents which took place two years ago has apparently resulted in a decided increase of passenger travel, and a gain in the yearly receipts of the various companies.

THE Supreme Court Commissioners of New York have reported adversely on the application of the Broadway Underground Connecting Railway Company for leave to construct its railroad in this city under Broadway, from Park place to Union square. They say the company has not shown that it has got or will get money enough to build the road and pay for the damage it might do, or that the railroad if built will connect at either end with any similar or other road.

#### "The Name On 'Em."

A HALF frozen pedestrian splattered and splashed through the slush in the Bowery last evening in pursuit of a third avenue car, in the window of which hung a placard with the cheering inscription, "Warm car." Overtaking it he sat down with an air of expectancy and hope that soon vanished. When the conductor came for his fare the passenger said discontentedly, "I can freeze just as well outside as I can in here. I thought this was a warm car?"

"I bought a mince pie once," said the conductor, with seeming irrelevance. "The feller that sold 'em was hollerin', 'Hot mince pies! Mine was froze stiff, an' I asked him what he holiered 'em hot for, an' all he said was, 'That's the name on 'em.'"

#### A Street Car Incident.

HE was a gentleman who wore overalls and carried a tin dinner-pail. His clothes were unready made and his boots were not symmetrical. He said the long journey of five miles each way to and from his work was trying. "Why don't you live in the city?" Because, sorr"—in a rich Milesian brogue—"if I lived in the city I should have to live in a tenement house. You don't know the kind of people who live there. They're a bad lot all through, generally. Sights go on no woman or child should see. I want to save my wife and children from seeing corruption, so I moved out here. Good-night, sorr." And he left the car at the little cottage, whose inmates were sheltered from "corruption," and was greeted with a chorus of "Here's father," that showed the gentleman with the dinner-pail had not lavished care without receiving a return in love.

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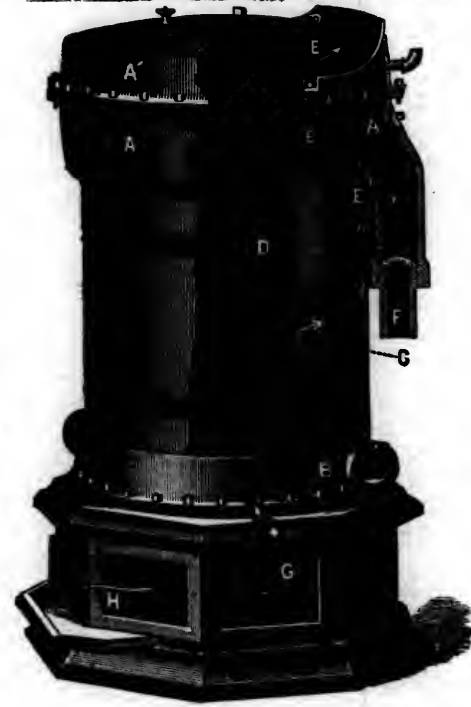
The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low State of combustion without danger of chilling the fire.

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## NEW INVENTIONS.

## TO INVENTORS AND PATENTEES.

THIS department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Street Railways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full description of those most useful and important are published *free of charge*.

Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

### List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF FEBRUARY 13, 1883.

- 272,035. Smoke and Gas Consuming Furnace: George Farr, Cincinnati, Ohio.  
 272,053. Valve-Gear: Rudolph M. Hunter, Philadelphia, Pa.  
 272,096. Car-Brake: Benjamin L. Stowe, Brooklyn, assignor to J. Van D. Reed, New York.  
 272,097. Automatic Car-Brake: Benjamin L. Stowe, New York, assignor to J. Van D. Reed, same place.  
 272,098. Car-Brake: Benjamin L. Stowe, Brooklyn, assignor to J. Van D. Reed, New York.  
 272,099. Railroad Gate: Charles F. Strack, Fort Wayne, Ind., assignor of one-half to Arthur M. Brackenridge, same place.  
 272,114. Saw-Guard: Leopold Bertsche and Frank Lofink, Pittsburgh, Pa.; said Bertsche assignor to said Lofink.  
 272,124. Refrigerator-Car: David W. Davis, Detroit, Mich.  
 272,135. Car-Coupling: Lyman Hatfield, Cleveland, Ohio, assignor of one-half to Henry C. Ranney, same place.  
 272,142. Electric Railway Signal: Wm. W. Le Grande, Louisville, Ky., assignor of three-fourths to George Wolf, F. De Funiak, and T. J. Pottinger, all of same place.  
 272,154. Car-Truck: Isaac H. Randall, Boston, Mass.  
 272,170. Journal and Stuffing Box: William A. Stone, Lorain, Ohio.  
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The cause of these few words of explanation lie in the fact that many inventors seem to recognize an obligation on our part to describe in full their inventions, while they in return do not feel compelled to go to any expense in order to acknowledge such publication. It would be manifestly impossible for us to publish full descriptions of all inventions of this class, when the weekly list of new patents of the sort numbers fifty or more. Every new invention of the character mentioned above is noticed in our weekly list of patents, and we shall further endeavor to give a brief description of all, but in selecting those for extended notice, we are guided simply by their importance and general utility. Our advertising pages are open at reasonable terms to all inventors and holders of patents, but this department is entirely our own, and we must be pardoned if we choose to conduct it in the manner we deem best. If inventors desire a medium through which valuable inventions of a certain class are brought into public notice free of charge, they will aid us in this direction by subscribing to and advertising in the RAILROAD JOURNAL, but they should do so solely in a practical business way, not influenced by any feelings of obligation, while none exists upon their part so to do, nor upon our part to publish any description that is forwarded us.

### Automatic Cam Switch Stand.

O. J. TRUE, PORT CLINTON, O., PATENTEE.

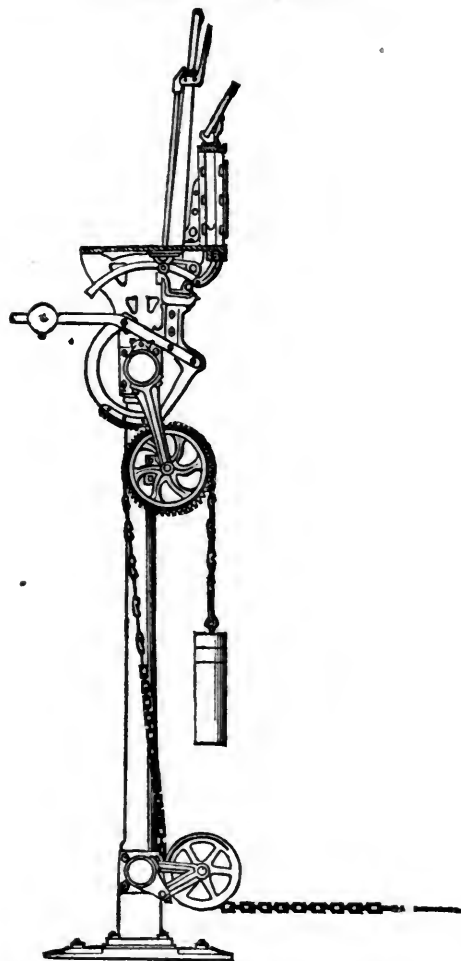
THIS Switch Stand is constructed for the throwing of split railroad switches and to guard against accidents caused by trains running through a switch when set wrong for them to pass. This Stand is automatic and always mechanically reliable in its action, throwing the switch back to the track on which it was set and locked before being moved by a passing train, and can be applied to any split switch now in use. The plan of this stand consists of a vertical crank rod passing loosely through a weighted sleeve, keyed and fastened to a hinged lever at the top of the weighted sleeve, and acting independently of the sleeve except when thrown down through a notch in the head of the sleeve, and thus fastening the crank rod and sleeve together. The sleeve passes down through a perpendicular shell or case in which is fastened a cam or V shaped track on which rests a friction roller which is fastened to the weighted sleeve. The crank rod being locked to the weighted sleeve, a train throwing the switch would turn and raise the weighted sleeve on the inclined plane or V shaped track, the weight of the sleeve throwing the switch back to its place



when relieved of the pressure of the wheels. This stand, in its construction, is very simple, strong and durable, having no weak points that are liable to get out of order. It has been used on the L. S. & M. S. Railway as a test of its practical working and durability. Between August 9th and October 28th, 1882, it was thrown under 718 trains, making a total of 71e engines and 10,125 cars running through the switch, forcing it to throw automatically without the slightest injury to the switch or stand, and always going back to the track to which the switch was set and locked.

### Interlocking Switch and Signal Apparatus.

[Continued from page 151.]



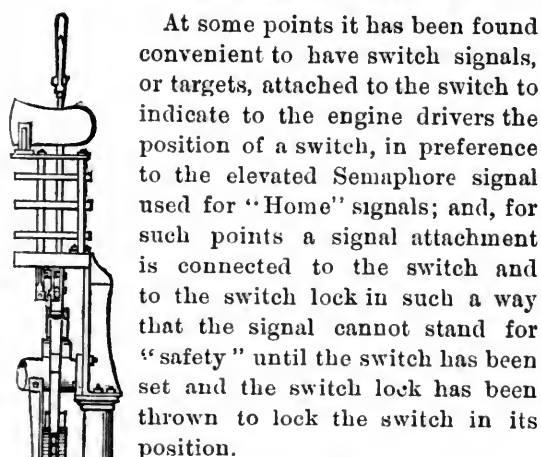
DISTANT SIGNAL COMPENSATOR.

The tendency of wires to stretch has been a source of much trouble in Interlocking apparatus, and has required constant care and attention, and the variations of length caused by variations of temperature have prompted the invention of numerous devices for compensating. For this reason special attention is called to the perfect arrangement for operating the signals shown herewith, and to the simple manner in which the practical difficulties are met in the Distant Signal Compensator. At some distance below the upper girt of the lever frame is supported a wheel with three sets of cogs. The central set of cogs is of a sprocket form, adapted to a flat linked chain, and the outer sets of cogs are similar to spur gearing with cogs extended to sharp points. On the central set of cogs hangs a section of flat-linked chain, one end of which is attached to the wire signal connection, by means of a short section of common chain; and on the other end of the flat chain hangs a weight, sufficient to keep the whole length of wire strained tight and to take the stretch out of the wire. Attached to the signal lever a yoke extends around the girt

which supports the levers, and underneath the girt this yoke is provided with sectors of cogs like the outer cogs on the chain wheel. When the signal lever is in its normal position the sector of cogs is quite clear of the chain wheel, and thus the chain wheel is left free to make a partial rotation, as the wire may lengthen or shorten, the weight constantly taking up the stretch of the wire. When the signal lever is drawn back to set the distant signal to "safety," the movement of the yoke attachment of the lever brings the sectors on the yoke into gear with the cogs on the chain wheel, and as the signal lever is moved to the end of its stroke the chain wheel is partially rotated, pulling the wire and moving the signal without any loss of movement from variations of the length of the wire. As the "Distant" signal is not required to stand at "safety" long at one time, simply while a train is due, any variation of length during the time the safety signal may remain set is of no consequence, as such variation is taken up as soon as the lever is returned to the normal position.

This arrangement enables a signal to be operated by wire at great distances with more ease than with other arrangements at short distances, and yields more of effective movement at the signal from the action of a common hand lever than any other arrangement. The application of the weights to overcome the stretch is by far the simplest method, and the wire always being strained towards the lever, the signal moves very promptly. This arrangement has also the important advantage of having the compensating device wholly within the signal cabin, where its condition and operation may be readily observed by the switchman, and it can receive due attention without difficulty.

#### SWITCH SIGNAL OPERATED BY THE SWITCH.



HAND SWITCHES CONTROLLED.

At some points it has been found convenient to have switch signals, or targets, attached to the switch to indicate to the engine drivers the position of a switch, in preference to the elevated Semaphore signal used for "Home" signals; and, for such points a signal attachment is connected to the switch and to the switch lock in such a way that the signal cannot stand for "safety" until the switch has been set and the switch lock has been thrown to lock the switch in its position.

#### HAND SWITCHES CONTROLLED.

In arranging to provide secure interlocking for some terminals and yards in this country, English engineers have noticed a little difficulty arising from a number of switches which are not absolutely required for the movement of the traffic, and yet without entirely re-arranging the plan of all the tracks such switches cannot be dispensed with. Such switches are generally used so seldom and irregularly that it seems useless to provide the appliances for operating them from the signal cabin and under other systems there

is no other way to make the situation safe. In the system of Interlocking offered by the Pennsylvania Steel Company, of Steelton, Penn., such cases are fully provided for, and by the use of several patented devices it is perfectly practicable to have any such switch under the full control of the interlocking levers and switch worked by law only. To use such a switch the signals must be at "danger" which holds outside trains from coming in; then the switch may be unlocked and thrown by hand. The act of unlocking it, however, holds the Interlocking apparatus *in statu quo*, and the switchman in cabin has no ability to work any lever until the hand lever has been restored to the proper position and locked. When the switch has been set to the correct position and locked, then the interlocking levers are released and the switchman in the signal cabin regains full control of the apparatus. By this improvement a switch may be fully controlled to make the interlocking perfectly safe, and at the same time the cost of a lever and the expensive connections for operating the switch, may be almost wholly saved.

In this item several other valuable improvements not described here, have been devised and applied, to facilitate operation or save in first cost, and it may be assumed that in the various situations which may be presented for protection each point will have full consideration, and every effort will be made to provide reliable protection at the minimum of cost. The company solicit correspondence.

### Coupling Link.

ISAAC H. TRABUE, OF LOUISVILLE, KY., PATENTEE.

This device, which is an adjustable and automatic link for cars, consists of a plate of iron 3x6 inches in dimensions, in which a stationary link is fastened perpendicular to the transverse axis, at about one inch from the extremity. A movable link with rubber packing is also attached to the plate. The stationary link is placed on the drawhead and the adjustable link is lowered or raised to suit the approaching car. The coupler can also be modified according to circumstances. It is claimed for this patent, 1st, That the brakeman is not exposed to injury in coupling cars; 2d. That it is automatic in its action; 3d. That the old fashioned drawhead can be used; 4th. That high cars can be readily coupled to low cars, and 5th, That the concussion in coupling cars is much lessened.

### Adjustable Boiler for Traction Engines.

The following is a description of an invention by Mr. ED. J. TAYLOR, of Alaska, W. Va., designed to furnish for Traction Engines a boiler that can be adjusted easily and leveled, while the machinery is at work, without in any way interfering with the action of the latter, and without having the ease of adjustment affected by the pressure of the moving machinery. The invention consists primarily in a road engine having its boiler suspended within its frame by trunnions extending outward from bed-plate, and having the driving-shaft passing in such trunnions, and in combination there-

with, positive means for adjusting or balancing boiler. The side rails of the frame are curved to allow the wheels free movement in turning the engine. To these side rails are secured the boiler-supporting standards or side pieces consisting of legs extending from each end of the frame and meeting at top, at which points the standards are provided with bearings to receive the trunnions of the oscillatory boiler. On top of this boiler is placed the machinery for driving the engine and operating various machines with which it may be used. The bed-plate is formed with a trough-like body to accommodate the crank and pitman; this bed-plate is secured by its bottom bearing or fastening flange to the boiler just in front of the line of the fire-box, and from the bed-plate in the same vertical plane with this bearing extend the trunnions. These trunnions are curved outwardly and upwardly from the bed-plate, and terminate in the journal ends, which are reduced where they enter the frame bearings. The upper portions or halves of these trunnions are removable and through the bores in said trunnions are passed the ends of the driving-shaft. At one end the driving-shaft is provided with a device for connection with the running gear of the engine, and at the other with the band-wheel for connection with the thrasher or other machine to be operated. The shaft is also provided with eccentrics for valve-stem. To one side of the bed-plate is placed the pump which supplies water to the boiler.

The construction thus described forms a road-engine in which the boiler does not freely oscillate—that is, does not automatically level or adjust itself, because it is hung so that one end (the front) is heavier than the other.

The boiler therefore is one for which positive means of adjustment are to be used, and the mechanism already set forth is specially devised so as to allow of a positive adjustment without any interference with the operative machinery, so that this may be working and the boiler adjusted as desired. The boiler swings freely on its trunnions about the shaft, and the latter turns freely within the trunnions as the machinery works. In this way they turn or move independently. The shaft has the advantage of a long bearing in the trunnions as well as a bearing on bed-plate; and the trunnions not only forming bearings for the shaft, but in their turn resting in the frame-bearings, the whole weight is transferred to these, and friction between the shaft and trunnions is relieved, allowing full freedom of movement.

At one end of the boiler is located the device for adjusting it.

Attached to one standard is a threaded lug; and at one corner of the boiler is a bracket having the perforation or unthreaded hole. Through this perforation freely passes a threaded bolt, the threaded lower end of which engages and works within the threaded lug. As the rod is turned down within the lug, its head bears upon the bracket and thus draws that end of the boiler down against the over-balance of the other end. As the rod is withdrawn from the lug that end of the boiler is released, and the other and heavier end swings down. In this way the boiler can be oscillated upon its trunnions by the rod and adjusted as the cir-

cumstances may require, either in traveling or in leveling the boiler for work when the engine is stationary. If desired, the device may be arranged so as to have the boiler automatically adjustable, and no positive adjusting device be used, by simply changing the position of the bed-plate with the trunnions and shaft so as to balance the boiler. In this arrangement, as well as the other, the relation of the trunnions and driving-shaft is valuable. The machinery being secured to the boiler and oscillating with it, there are no connections to be affected by the movements of the boiler, as the latter automatically adjusts itself in traveling, and the trunnions turn freely above the shaft without disturbing the machinery, in like manner as they turn when the boiler is adjusted positive.

The advantages in keeping a horizontally boiler level on hilly or mountainous roads are many, and plainly to be seen, as it is impossible to avoid burning and injuring a boiler when either end is elevated sufficiently to make it bare of water and exposed to fire for any considerable time, as is necessarily the case on a grade, unless the boiler can be leveled. It is also a very great help in enabling the engineer to carry the proper amount of water in the boiler, by having the same always level, and it will save much time in setting engine for work as the boiler can be easily leveled while on uneven ground.

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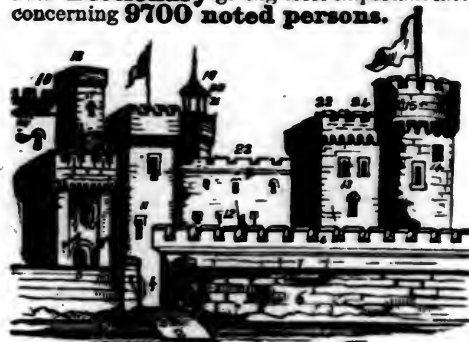
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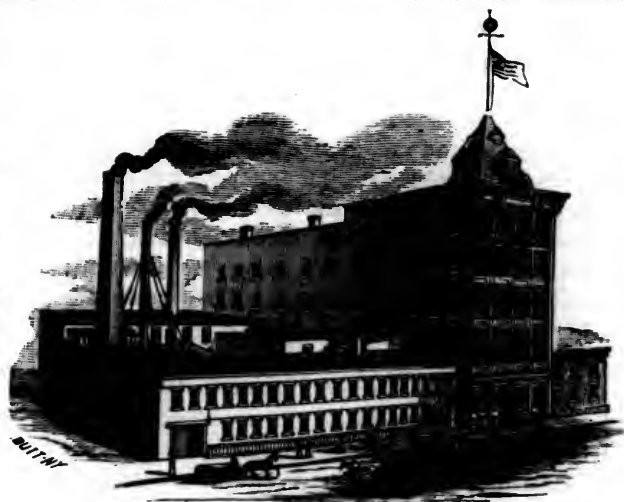
FOR a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. BOYNTON, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" saw, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion: the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth,

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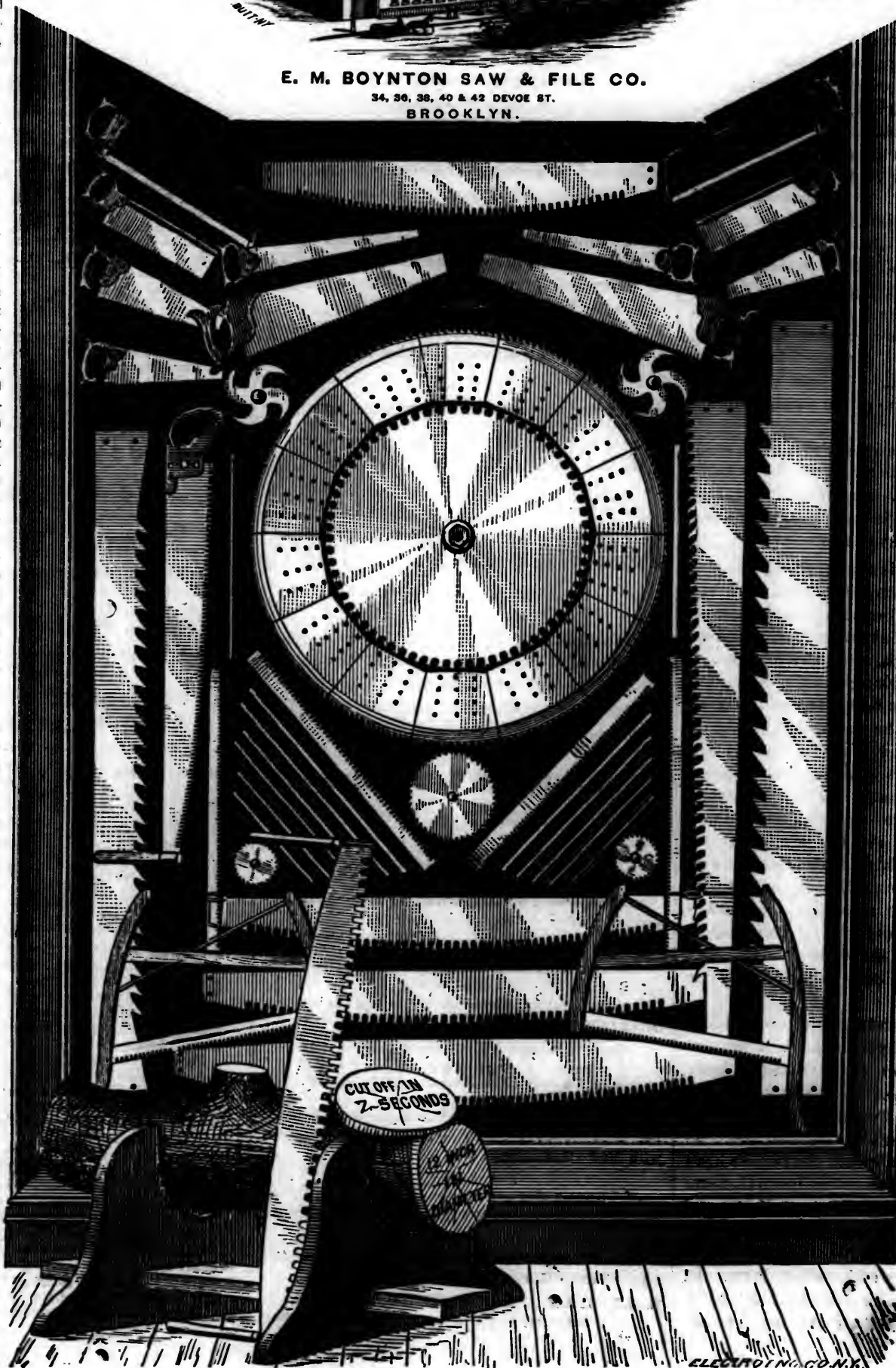
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ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railways.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 9.]

NEW YORK, MARCH 3, 1883.

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proaches in fullness, detail, and system, this  
coming Exposition. The premium list an-  
nounces a distribution of about four hundred  
and fifty gold, silver and bronze medals for  
special excellence in various departments of  
railway appliances. These departments are  
eight in number, lettered from A to I. They  
are respectively devoted to Rolling-Stock, sub-  
divided into five classes: locomotives, cars,  
running-gear, interior furnishings for passen-  
ger cars, and freight car appliances; Machi-  
nery: subdivided into classes of wood-work-  
ing and iron-working; Track Goods; Metals;  
Station and Office Appurtenances; Pumps and  
Water-Station Appliances; Oils, Varnish and  
paints; Miscellaneous; and Street Railway  
Appliances. We give this week in our News  
Department the letter of the Secretary, Mr. E.  
H. Talbott, and also the rules and regulations  
governing the Exposition. Next week we will  
publish the premium list entire, with the  
names of the officers, commissioners and mem-  
bers of the executive committee.

The subject of the Exposition is introduced  
in our editorial columns for the reason that it  
will be a marked event in railway annals, and  
worthy of more than a passing notice as an  
item of news. It is more than a display, more  
than an exposition in the ordinary signification  
of these terms. Every dollar of the proceeds  
will be devoted to beneficent purposes, the  
officers and managers give their services gra-  
tuitously, seeking no reward other than the  
consciousness of duty well performed, and the  
competition is open to all. Hitherto, railways  
have been ready enough to examine and adopt

appliances with a view to improving the facili-  
ties of their own individual roads, but the ap-  
proaching exhibition is the first step in the di-  
rection of universal benefit to the general in-  
terests of American railways. As such it de-  
serves the encouragement and support of every  
company in the country, and our editorial  
columns are opened freely to the enterprise,  
for the purpose of keeping it before the public  
view.

We trust that the gentlemen in control of the  
Exposition will not limit the display to this  
single year. The ingenious and inventive turn  
of mind that characterizes our countrymen is  
so marked, that another exposition could be  
held a few years hence without the exhibition  
of a single appliance that will appear in the  
Chicago display. The recurrence of the Expo-  
sition at regular intervals would stimulate the  
invention of new and valuable railway appli-  
ances; and the formation of a permanent or-  
ganization with this end in view would in real-  
ity be the foundation of a National School of  
Railway Arts.

### TRAIN FERRIAGE.

THE ponderous ferryboat "Maryland," is  
once more a familiar sight in New York  
harbor, carrying the through Southern and  
New England trains from the Pennsylvania  
Railroad station in Jersey City around the  
Battery and up the East and Harlem rivers  
to connect with the tracks of the New York,  
New Haven and Hartford and the New York  
and New England railroads, thus saving pas-  
sengers a tedious change from cars to ferry,  
from ferry to street cars or carriages, and from  
these to cars again. The reappearance of the  
"Maryland" is a source of pleasure to the old  
travelers on the above lines, and it suggests the  
feasibility of employing boats to ferry trains  
from and to other points near New York.  
Through connection might thus be made be-  
tween other lines, and the possibility presents



itself of transporting trains across the Hudson, from the Jersey City terminus of railways, landing passengers in New York with almost as much celerity as by means of passenger ferryboats, and with far more comfort to the travelers. A through conveyance from the West and South to New York without change has not been accomplished up to the present time, and train ferriage is as yet the only practical solution of the difficulty. The Hudson River Tunnel is an enterprise whose results are still problematical, and the construction of a bridge across that wide and important highway of navigation is but a possibility of the remote future. Ferriage of trains is at present the only means by which such an end could be reached, and the difficulties in its way are not insurmountable. They lie merely in the construction of a suitable vessel, and in the transfer of trains to its docks from the shore rails. The exercise of a little ingenuity, we should think, would result in the production of a train ferry of strength and speed, and of a system of transfer whereby trains could be run from shore to boat, and from boat to shore with ease and comparative quickness. The plan is at least worthy of consideration by the railway companies who are now compelled to ferry their passengers across the river after debarking from the trains.

#### LIABILITY OF RAILWAY COMPANIES IN BAGGAGE TRANSPORTATION.

THE general custom on American railways is to limit the baggage of each passenger to one hundred pounds, and the liability of the carriers to one dollar per pound upon the loss or destruction of such baggage. This seems to us an equitable arrangement, yet its validity is often questioned in the courts, and claims are made upon companies for the full value of injured or missing baggage, regardless of the contract to which passengers virtually bind themselves in purchasing their tickets, for this stipulation is almost invariably printed thereon.

Strictly speaking, we can see no reason why the purchase of a passage ticket upon a railway should carry with it the privilege of even limited baggage transportation without extra charge, any more than the payment of fare upon street railways and omnibuses should confer a similar gratuity. It was originally a concession of courtesy on the part of railways, who recognized the accompaniment of baggage as essential to the comfort and convenience of their passengers, but it is now regarded by the latter as a right; and a still further claim is made that the companies have no power to

restrict their liability upon baggage thus transported.

Did the railway companies fix a definite charge for all baggage carried, there would be some justice in the claim, but such carriage is simply a concurrent privilege, and they clearly should have the right to fix their responsibility. A passenger without baggage is charged the same fare as one with it, and evidently no fixed portion of his fare is set apart to cover the expense of baggage transportation. An extra payment of a small sum will insure railway passengers a claim for full value of their baggage, yet they are generally averse to paying for this insurance trusting in case of accident to establish their right to full recompense from the company by the purchase of a simple passage ticket. As well might a man insure his house against fire for \$5,000 and claim \$10,000 in case of its destruction, on the ground that such was its proper value, or the beneficiaries of the holder of a life insurance policy for \$10,000 demand a payment of \$20,000, claiming that their loss through the death of the insured could not be adequately placed at a less amount.

Railways are expected to give much and receive little. Passengers are frequently allowed to overstep the limit of one hundred pounds in their baggage privileges without additional charge, but they take no note of such accommodations, and are eager to demand excessive damages in case of accidental loss or injury, deeming a railway company a legitimate subject for extortion. As we remarked editorially a week or two ago, it is considered permissible to defraud a corporation, and persons otherwise honest, and of business integrity, experience no twinge of conscience when they take questionable and unscrupulous advantages of the privileges accorded them in railway travel.

#### AN UNFAIR DISCRIMINATION.

IT is difficult to establish rules and precedents that will apply with equal fairness to both railway and steamship companies. In the one case the property of the organization extends from the point of departure to that of destination, and a railway company is properly held to account for a rigid guardianship of all its possessions, so far as it may affect the comfort and safety of its patrons. In the other, the transporting property of the company is vested only in its vessels, and its responsibility ends with their safe and proper management. Railway companies must construct, own, and supervise their roads, while steamer lines are furnished gratuitously with avenues of travel by the bounteous hand of Nature. So far, there is a distinction which must be

recognized, but unfortunately this recognition has been carried too far. It seems to be considered a settled fact that railway accidents are inevitably the results of carelessness and mismanagement on the part of managers and employés, while steamship disasters are visitations of Providence, wholly beyond prevention by human interference. As a natural sequence of these erroneous deductions, no life is lost upon a railway, no injuries sustained by passengers, without an action being brought in the courts by the heirs of the deceased parties, or by the injured parties themselves, to recover damages from the company upon whose lines the calamity occurred, while hundreds of lives may be lost through the foundering or wrecking of vessels, and not a single suit be brought against the owners of the line.

In truth there are numerous instances in which railway accidents have occurred through unforeseen and unavoidable causes, and an equal number of steamship disasters have been brought about solely through mismanagement and culpable neglect, yet of these facts little cognizance is taken. Railways must pay for the results of accidents, and steamship companies are exempted from damages. We do not deny that the responsibility of railways is necessarily and properly more general in its scope than that of steamships. There is no excuse whatever for railway collisions, since the tracks are exclusively the property of the railway company, and no intruders thereon are permitted, while the oceans, seas and rivers are public highways, and open to careless, inefficient navigators, who may bring their vessels in collision with others; let the latter do what they will to avoid the catastrophe, yet unavoidable accidents will happen on railways despite the most careful and prudent management, and steamers will sink when the exercise of proper caution would have averted the disaster. Common fairness demands that the question be narrowed down to the culpability of the carriers. There is no reason why steamship companies should escape the penalty of their own mismanagement, and railway companies be heavily mulcted for every disaster, regardless of its cause. There is, however, one sad fact in connection with this discrimination that bars the way to justice. Terrible as may be the consequences of railway disasters, as a rule they are as nothing compared to the awful loss of life that marks the sinking or wreck of an ocean steamer. So appalling is generally the latter, so universal the consternation and grief created, that a legal suit for damages would seem but mockery. The magnitude of such catastrophes robs them of all but their horrors, and the negligence of officers and crews is

overshadowed by the sacrifice of victims. This is not law but human nature, and no argument can overcome a conviction springing from the woes of suffering humanity.

#### CONGRESSIONAL STINGINESS.

THE River and Harbor Bill for the ensuing fiscal year contemplates an appropriation of about \$7,000,000 only, and this trifling sum is to be awarded by the same legislators who last year voted away nearly \$20,000,000 of the public moneys with princely generosity. After this display of niggardly economy, we can but rejoice that the Forty-seventh Congress comes to an end to-morrow. Only \$7,000,000! Think of it! What is to become of Puddle Creek, Mud River, Goose Lake and other mighty highways of navigation? A hot summer will dry them up completely, and either necessitate the establishment of courts of inquiry to hear testimony and determine their former location, with a view to their re-establishment, or compel the vessels navigating upon these great avenues of commerce to mount themselves upon wheels and proceed dry-shod to their destinations. This state of affairs reminds us of the conversation which took place last year between the Hon. SOCRATES BLADDERGAS (we think that was his name), a representative from the rural districts, and a member of the River and Harbor Committee of the House. Mr. BLADDERGAS saw the public coffers open for Congressmen to help themselves as they would from a bag of peanuts, and concluded that some portion of this wealth might as well be diverted in his direction. He accordingly approached the aforesaid member of the Committee and requested the insertion of an item in the bill which would appropriate several thousand dollars for the improvement of the channels of navigation in his district. "But, Mr. BLADDERGAS," expostulated the Committee member after examining his maps and statistics, "I find there is no water anywhere within fifty miles of your district!" "What difference does that make?" demanded the Hon. Mr. BLADDERGAS, impatiently; "H—! We can dig till we strike some."

#### JUSTICE TO ADVERTISERS.

THE first consideration of a journal is or should be the interests of its readers, for its primary object is to furnish instruction and entertainment, while its advertising features are secondary, forming an adjunct to its literary contents. Publishers who crowd their columns with advertisements, regardless of their encroachment upon the literary portion of the publication, are conducting little else than an advertising circular on an extensive scale. They seem to forget that the advertisements are in-

serted to catch the eye of the reader but rather cling to the idea that its reading matter is intended for the diversion of its advertisers. We cannot imagine anyone purchasing a paper simply to read the advertisements contained therein, unless they were in search of information relating to special services or commodities; and notwithstanding the fact that the chief profits of a newspaper or of any periodical lie in its income from advertisements, these should always be of secondary consideration in the make up of its contents. Paradoxical as it may appear, the more firm the adherence to this general rule, the more attractive and valuable the publication to its advertising patrons. The latter are shrewd enough to appreciate the fact that the more readable a paper is, the more widely it is read, and the more extensively are their announcements circulated.

But there are more subtle points in the display of advertisements, than seem to appear to the ordinary publisher. Justice to advertisers demands that their announcements shall be so placed in a journal as to meet with the attention of the readers, and an additional point of advantage is given them if this attention may be attracted to an advertisement, upon the reading of articles and items which treat of corresponding subjects. It is a common practise with many journals to adhere so rigidly to the separation of their literary and advertising pages, that a reader may completely exhaust the former without his eye meeting a single advertisement, the natural result being that four-fifths of the readers never even glance at the advertising pages, throwing them aside as one would the shells of a nut after getting at the kernel. It is also common for journals to insert advertisements in any portion of their columns that may be convenient, regardless of the nature of the adjacent reading matter, thus attracting the reader's attention at a time when his thoughts are concentrated upon entirely foreign subjects, and consequently unable to dwell upon the advertiser's announcement.

The principle upon which we display advertisements in the AMERICAN RAILROAD JOURNAL is simple and effective, and we generously state it for the benefit and guidance of our contemporaries. The JOURNAL is divided into Departments, and in and at the close of each department are inserted those advertisements which would, of themselves, come under a similar heading, while every advertising page either contains itself, or is adjacent to a column or page containing appropriate reading matter. This system is adhered to as closely as circumstances will permit, and by it our advertisers are assured the most thorough and satisfactory attention of our readers. For this reason

as well as for others, the AMERICAN RAILROAD JOURNAL is a valuable medium for advertisers, for their interests and those of our readers are by the above system, uniformly combined.

#### EDITORIAL NOTES.

A STORY has been going the rounds of the press lately, describing a game of poker played by a party of railroad kings, in which one of the monarchs lost all his cash and finally put up his locomotives as collaterals, losing them also before he dropped out of the game. This suggests to us the invention of a new and exciting pastime, which we will christen "Railroad Poker." It will resemble the ordinary game of poker in everything but the form of betting, which will be conducted on a new system. The nomenclatures of this game will be entirely novel, and it will be common to hear of a "Locomotive limit," a "Tender ante," "Pullman blinds," and "Sleeper straddles."

THE *New Era*, of Halifax, N. S., pays a graceful compliment to the JOURNAL, which we trust is fully merited. We quote its words with becoming modesty: "We welcome to our exchange list the AMERICAN RAILROAD JOURNAL. This valuable weekly has reached the fifty-first year of its existence, and is the oldest paper of the kind in the world. Its contents are well written and possess much interest. It has the merit also of having a Canadian Department, in which are always to be found matters concerning our railway progress and doings. Its long life is a proof both of its merits and usefulness."

WE have established this week a double system of paging. Hereafter we give the page numbers both of the weekly issue and of the volume. The index on the cover refers to the page of the current number, while at the close of every volume we will print a special index for those of our readers who desire to preserve bound volumes of the RAILROAD JOURNAL. This index will have reference to the volume paging.

THE New Jersey legislature is again wrestling with a corporation, and groaning under the pressure of anti-monopoly sentiment. This time it is the Plank Road between Newark and Jersey City, a corporation with a capital stock of \$90,000, and paying enormous dividends. The corporation is controlled by the Pennsylvania Railroad, and it is claimed that the toll charged are extortionately high.

INFORMATION is received as we go to press, that Governor CLEVELAND has vetoed the bill reducing the fares on the New York elevated roads to five cents. This action was unexpected, and creates great surprise.



## CORRESPONDENCE.

[COMMUNICATIONS are solicited for this department on all subjects pertaining to Railroads, Steam Navigation, Machinery and Manufactures. No attention will be paid to communications unless the name and address of the writer is furnished us, though if desired, they will be withheld from publication. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to this department of the AMERICAN RAILROAD JOURNAL.]

## OUR CANADIAN LETTER.

[From our Special Correspondent.]

THE HUDSON'S BAY ROUTE, ETC.—THE CANADIAN DEBT—AN IMPORTANT SCHEME—GULF OF ST. LAWRENCE TELEGRAPH SYSTEM—RAILROAD AND OTHER NOTES.

## THE CANADIAN DEBT.

In 1860 a loan was issued for £6,446,636 sterling by authority of Parliament, for the purpose of consolidating a certain portion of the then existing debt. That loan bore 5 per cent interest and was payable at the will of the government in twenty-five years. That period would expire in 1885, but it is considered desirable to ask Parliament to authorize the issue of debentures for reducing the bonds. The new loan will not be at more than 4 per cent interest. It is thought that a number of holders would reinvest in Canadian securities, though at lower rate of interest. Arrangements have been made with London, England, agents by which they would exchange these bonds before the 1st of January, 1885, at the reduced commission of a half per cent. Sir Leonard Tilley thinks that half the debt will probably be redeemed before January 1st, 1885, thus leaving a smaller portion to be placed on the market, and ensure a larger price than if the whole \$24,651,176 were offered at the same time. A portion of this had been in a measure reduced by a sinking fund which amounted in January last to £1,381,325, leaving the amount to be redeemed £5,065,300. It might become a question for the government whether it would be desirable to continue the 4 per cent or take a smaller rate of interest. The Finance Minister will take some means of stating by advertisement that the bonds would be exchanged for not less than a certain rate, so that proposals can be had from parties who would name their rate, the government having stated the minimum.

## LOUISBOURG LINE.

A very important scheme is being revived, i.e., the constructing of a line from the Gut of Canso to the old historic port of Louisbourg, on the Island of Cape Breton. The Gut of Canso is one mile wide, separating Nova Scotia proper from the Island of Cape Breton, and cars and passengers could be transferred from the Nova Scotia side in steamers. This line would properly be an extension of the Intercolonial, but the people of the Island say it must be built, if it has to be built as an independent line—the distance is eighty miles. It is claimed that Louisbourg is 250 miles nearer Europe than any

other existing winter port, and consequently will be the great jumping off station between America and Europe. So plain is the utility of this line that by many it is claimed, "that were it in the United States, it would have been built thirty years ago—indeed, they have been agitating its construction for that length of time, and some of its first promoters who visited Washington and the United States years ago, were encouraged in its construction. Strong influence will be brought to bear on the Dominion Government to extend the line as a part of the Intercolonial, or give aid for the construction of a new line.

Strong influence is here with a view of defeating the railway bill known as the "Dalton McCarthy Bill."

## THE HUDSON'S BAY.

Mr. Dawson, of Algoma, on Monday last moved for a report of all information through reports from officers of the government, and all correspondence in reference to the Hudson's Bay, duration of navigation, resources, approximate quantity and value of whales, seals, walruses and porpoises annually caught, and whether the rumors as to abundance of codfish in various parts of the Bay have been authenticated, and what rivers on its eastern coast are the best adapted for the industry of salmon fishing; also concerning its mineral resources, and in what sections iron, copper, lead, the precious metals, and coal are found. Although apparently a very formidable motion, Mr. Dawson merely wanted a synopsis, and not a lengthy document; he spoke of the vast wealth of this region, and the great value it would be when opened up, etc., and closed by saying the climate, as I have said, is not unfavorable to farming operations. I think, altogether, we should know something more of this great inland sea, and that we should take means to have a good survey made of it. Why, sir, *two hundred years ago nearly as much was known of that sea as there is now. Both the French and the English sent their fleets there. The discussions on the boundary question have brought all that early and very interesting history to light. It is known that battles were fought there, that large vessels—seventy-four gun frigates, I believe—have navigated that sea, and it has a history which is very interesting to both the French and English population of this Dominion.*

I may mention I have a report that the annual value of the catch of the American whaling fleet in Hudson's Bay, with the ruling price of oil, was as follows: In 1863, \$177,000; in 1864, \$427,000; in 1865, \$238,000; and, in 1866, \$200,000. In these four years no less than nearly \$1,000,000 was the value of the exports; and this only relates to a portion of the products of that region. This shows what we might look for in the future in the event of improved communication with that great sea being opened up.

Sir John A. Macdonald in reply, said he was glad that his honorable friend had moved in the matter. It had not escaped the attention of the government that there is in the future a great prospect of wealth and prosperity being created in connection with the fisheries and mineral resources of Hudson's Bay, that what information was at disposal of the government would

be brought down. There were three railways now procuring acts of incorporation, to connect older Canada with Hudson's Bay, and the gentlemen connected with these companies were of high standing and wealth. That unofficial communications were passing between Sir Alexander Gait and the Admiralty to ascertain whether the admiralty will be willing to enter into some joint arrangement with Canada for the survey of Hudson's Bay and Straits, by putting on a vessel fitted out for navigation in the Arctic seas, and arranged to undergo all the casualties to which arctic voyagers and ships are liable; sending her to cruise about in Hudson's Bay and Straits, and in the waters approaching the Straits, for the purpose of ascertaining beyond doubt the length of time during which there is a probability every season of these straits and Hudson's Bay being open to navigation. That it is probable that the Admiralty and Her Majesty Government will be prepared to aid in accomplishing this object, either by furnishing a vessel, or by contributing to the expense of such a survey.

## GULF TELEGRAPH LINE.

It is likely the marine telegraph of the Gulf of St. Lawrence will be extended to Nova Scotia, New Brunswick and Cape Breton.

The Ontario and Quebec Railway is being pushed forward very rapidly.

During cold weather track-walkers make four nightly trips over the Canada Southern to guard again broken rails.

The Central Pacific Railway dispatched from Montreal to Winnipeg 21 cars of freight by special train Montreal via Ottawa to Brockville, Utica and Black River, New York Central, Lake Shore and Michigan Southern, Southern Chicago and Northwestern and lastly by Central Pacific Railway, Western Division. This is the result of the alliance between Mr. Vanderbilt and syndicate in their fight with the Grand Trunk. Lively times may now be expected between these two great combinations, but if we mistake not, the Canadian people will not be long in deciding upon which side they will range themselves. The Central Pacific Railway is damaging Canadian interest in the course it is pursuing. The gentlemen at the head of the Grand Trunk are men of brains and action, and the syndicate will have to fight them for all their worth, with a good prospect of being foiled.

## THE OTTAWA WADDINGTON AND NEW YORK RAILWAY AND BRIDGE COMPANY.

T. Alderson Brown, a prominent English mining engineer and financier left to-day for England. Mr. Brown goes over in the interest of the Ottawa, Waddington and New York Railroad Bridge Company, with a view of placing the bonds of the road in the money market. He has every assurance of success, being a man of influence in London and of determined energy. We expect to soon hear favorable news and see the railway under construction.

## PERSONAL.

Will "A Manchester Stockbroker" give his name and address to Mr. White? It is said the Canadian Pacific Railway is interested with the railway in question, and will make connection with it for traffic purposes.

The Quebec Railway Committee adopted the

following bills: To incorporate the Lake Temiscaming Railway Company; to amend the charter of the Waterloo and Magog Railway Company; to incorporate the Saguenay and Lake St. John Railway Company.

OTTAWA, March 1, 1883.

### Railway Medical Service—Reply to "Superintendent."

EDITOR AMERICAN RAILROAD JOURNAL.

DEAR SIR:—The discussion of debatable topics pertaining to railroad interests in the pages of your JOURNAL is a liberal policy and conducive to wise conclusions, provided it be conducted with candor and good temper. Sophistry and epithets are a poor substitute for arguments, and I shall not imitate the example of your anonymous correspondent, who uses such weapons behind a mask. My present purpose is to point out a number of errors, inconsistencies and fallacies in the communication signed "Superintendent," which appeared in your issue of February 17.

It is an error to suppose that "he proposes that every railroad company shall organize a medical staff," etc. I propose nothing, but do believe that it would be good policy for the large companies, which have abundant means, to organize a medical service.

It is an error to suppose that I have a "pet scheme," including railroad hospitals, relief supplies, inspection of carriages, buildings, etc., supervision of the transportation of livestock, and so on, to be applied uniformly to all roads. No plan could be devised which would fit perfectly any two roads of different location and magnitude.

It is a fallacy to object to a medical department as being a "species of petty inquisition into an affair of business," when such department is organized by the company itself for the protection of its own interests.

It is an inconsistency to object to a medical department on the ground that "the world has gotten along in its transportation for some hundreds and thousands of years without doctors being directly concerned." The world managed to get along without steam-engines and railroads for a good many thousand years, and the better part of the world, including railroad managers, are adopting such innovations as Pullman cars and Westinghouse brakes, although their parents were happy without them.

It is an error to suppose that a medical department on a railroad precludes any one from choice of his medical attendant. Under any system, every one can employ a physician at his own expense; and the plan of the Baltimore and Ohio Railroad Company allows every one to choose his medical attendant, who is paid out of the general fund.

It is a curious error to infer from anything which I have written, "that one doctor is about as good as another." I should not even presume that one railroad superintendent is about as good as another.

The question, "Who is to select the medical staff which he would have saddled upon every railroad company?" was perhaps intended for a conundrum; but I don't intend to give it up without a trial, and venture to suggest that

they might be selected by the same authority as the superintendents, and with reference to their supposed knowledge and fitness for their duties.

The following is unfortunately too true: "In order to determine a good doctor, it is necessary one should know more than the average doctor does." Individuals are confronted by the same stern fact as railroad companies, in the choice of medical advisers. It is, of course, impossible for them to know as much as even the average doctor." Luckily faith removes the mountain, for most men implicitly believe their wives and their doctors to be the best in the world.

The "growing suspicion" "that civilized communities at large would be better off, if there were neither doctors nor apothecaries," will be a mature conviction when the whole body of people become better educated in hygiene than medical men are at present. When that good time comes (God speed the day), people will all have the wisdom of angels, and their wings also, so that railroads and superintendents and doctors will alike become superfluous.

In the last paragraph but one, I am made to advocate "having the State thrust upon the public carriers duties not strictly belonging to them," which is quite at variance with the statement in the first paragraph—"he proposes that every railroad company shall organize a medical staff." I have never advocated legislative interference in railroad medical service, and do not think it will be necessary in this country; though it may very probably happen, unless the companies take early steps, in that direction themselves. As to the title, "The Medical and Surgical Inspection Humbug," I choose to let its merits be settled between "Superintendent" and the administrations of the Pennsylvania and Illinois Central railroads in this country, and those of most of the railroads on the continent of Europe. They will be under special obligations to him for exposing the "humbug."

Finally, I do not presume that "Superintendent" has brought forward all his best arguments against railway medical service, and trust that he will offer some harder ones to answer.

Respectfully Yours,

S. S. HERRICK.

NEW ORLEANS, Feb. 21, 1883.

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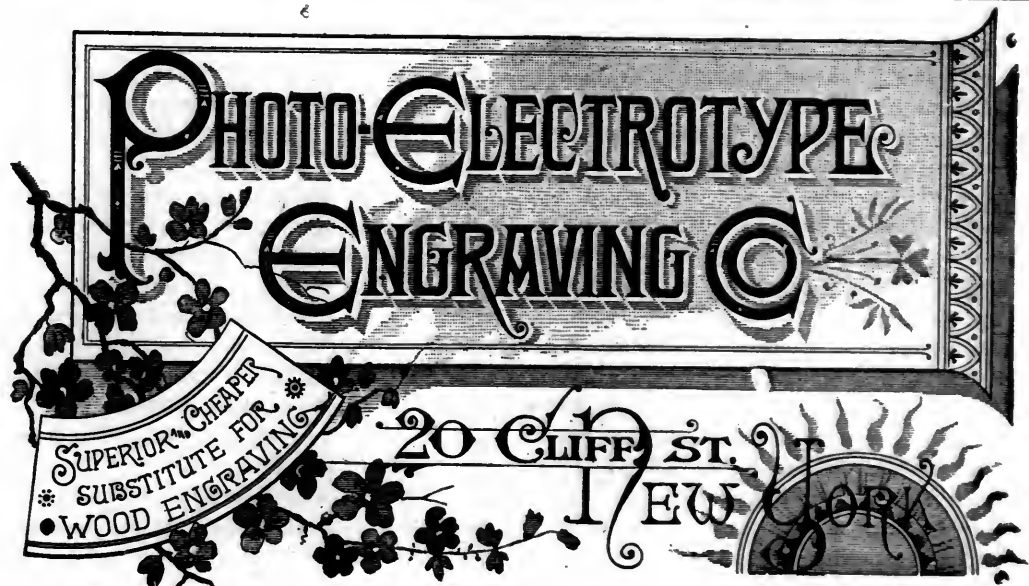
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## NEWS DEPARTMENT.

[Items of information suitable for this department and especially those adapted for the columns devoted to the Organization, Incorporation, Construction and Consolidation of Railways, are earnestly desired from our readers.]

### The National Exposition of Railway Appliances.

*From the Official Pamphlet of the Secretary.*

#### TO THE PUBLIC.

ALMOST a year ago the feasibility of organizing and conducting a National Exposition of Railway Appliances at some favorable point in the United States and in the near future, began to be discussed by prominent parties deeply interested in the growth and prosperity of this interest. A very thorough expression of the sentiment of railway men, and inventors and manufacturers of and dealers in railway appliances, has during this period been obtained, the universal tone of which has been enthusiastically in favor of the proposition.

Accepting this as a safe indication that an Exposition can be organized which will reflect credit upon and result in great good to the railway and manufacturing interests of this country and of the world, and believing that the magnitude of these interests and their wonderful growth in the past few years make the present a most auspicious time in which to accomplish this, a Board of Commissioners, whose names are given in this pamphlet, has been organized to arrange for and conduct such an Exposition.

The Inter-State Exposition buildings, located near the business center of the city of Chicago, on the shore of Lake Michigan, and convenient to the depots of the various railways, have been secured. These are the largest Exposition buildings in this country, and are especially adapted to the purpose in question. The main building is 800 feet long and 200 wide, has a capacious gallery one-third of a mile in length, and is provided with an abundance of steam power for operating machinery. Railway tracks will be laid in this building, for the accommodation of cars and locomotives, and for use in making tests, which will be connected with the tracks of the Baltimore and Ohio, Illinois Central and Michigan Central roads, running within a few feet of its eastern wall.

Most favorable rates will be given by the railways of the country for the transportation of articles intended for exhibition and excursion parties desiring to attend.

A series of scientific and practical tests, to be made by well-known scientists and carefully selected committees, extending to every article and every description of material susceptible of reliable test, will constitute one of the most interesting as well as most valuable features of the Exposition. An official record of these tests and of every exhibit, including a list of prizes awarded, will be made and published under direction of the Commissioners.

Every dollar of the proceeds of the Exposition, after defraying necessary expenses, will be devoted to benevolent purposes connected

with the railway service, to be hereafter designated by the Commissioners.

A large guarantee fund has been raised in Chicago, sufficient to insure beyond peradventure the financial stability of the Exposition.

No officer or commissioner will receive any salary or compensation for his services as such, the good of the great interests named and of the army of employes connected with them being the only incentive to the labor which he shall perform.

The Exposition will open on Thursday, May 24, and close on Saturday, June 23, 1883, and the time for preparation being thus limited, it is important that all who intend making exhibits shall begin necessary preparations at once.

Although only a preliminary circular has yet been issued, which has necessarily had but a limited circulation, assurances of a desire to be represented at the Exposition and of deep interest in its success have been received from hundreds of manufacturers and inventors, located in every part of this country and in Europe. In view of this and other encouraging indications, it is believed that an exhibit can be organized which, in its benefits to the more intelligent masses, and especially to officers and employes in the railway service, and all who are interested in the manufacture of railway appliances, and as a contribution to the world's store of technical and practical knowledge, has never been equaled.

To this end it is earnestly hoped that every one who is directly or indirectly interested in supplying railways either with material or manufactured articles will interest himself in this matter, and that every deserving article properly coming under the head of *Railway Appliances* may be creditably represented at this Exposition.

All correspondence should be addressed to  
E. H. TALBOTT, Secretary,  
Grand Pacific Hotel, Chicago.

#### RULES AND REGULATIONS OF THE NATIONAL EXPOSITION OF RAILWAY APPLIANCES.

The following Rules for the government of the Exposition will be strictly enforced:

##### RULE I.

The building will be open for the reception of articles from and after Wednesday, May 1, 1883. The Exposition will be opened on Thursday, May 24, and will continue open from day to day thereafter (Sundays excepted), from nine o'clock A. M. to ten o'clock P. M., until Saturday evening, June 23, inclusive.

##### RULE II.

SEC. 1. Articles may be entered either in "competition" for medals, or for "exhibition only," at the option of the exhibitor. The Premium List is not intended to exclude proper articles not named therein, but such will be received for exhibition and assigned space, and, if entered for medals, will be assigned to proper "classes," and examined by the jurors with a view to the same recognition by the Board as if named in the list.

SEC. 2. Exhibits intended for competition must be entered, labeled and in proper position, on or before the opening day. Failure on the part of an exhibitor to comply with this rule

will forfeit his right to compete or exhibit unless good reason for such delay is shown. The importance of strict compliance with this section is urged upon all exhibitors.

SEC. 3. It being impracticable to notify exhibitors of the date of jury examinations in order that they may be present and explain their exhibits, they will be required to file with the Secretary, prior to June 5, a brief written or printed statement of the points of superior excellence claimed for the exhibit. These statements will be submitted to the juries, and are intended to aid them in making careful and thorough examination of the articles exhibited.

SEC. 4. Articles for competition must be entered in the name of the manufacturer, owner or inventor, either directly or through an authorized agent.

SEC. 5. Machinery at rest will not be considered as in competition with machinery of the same class in motion.

##### RULE III.

An entrance fee of \$5 will be charged for each article or display competing for a premium or entered for exhibition only. No charge will be made for steam power.

The charge for space occupied by exhibitors is graded according to the amount, as follows:

All exhibits occupying less than 10 square feet will be charged a space fee of \$2.

From 10 to 100 square feet.....	per foot, 20c
From 100 to 200 square feet.....	" 19c
From 200 to 300 square feet.....	" 18c
From 300 to 400 square feet.....	" 17c
From 400 to 500 square feet.....	" 16c
From 500 to 600 square feet.....	" 15c
From 600 to 700 square feet.....	" 14c
From 700 to 800 square feet.....	" 13c
From 800 to 900 square feet.....	" 12c
From 900 to 1000 square feet.....	" 10c
From 1000 to 1100 square feet.....	" 10c
From 1100 to 1200 square feet.....	" 9c
From 1200 to 1300 square feet.....	" 8c
From 1300 to 1400 square feet.....	" 7c
From 1400 to 1500 square feet.....	" 6c
1500 or more square feet.....	" 5c

##### RULE IV.,

All applications for space must be made on printed forms, which will be furnished by the Secretary. Space will be awarded as early as practicable (after the application has been received) consistent with the plans for the classification and proper arrangement of exhibits, and notice of such awards of space will be mailed to applicants at the earliest possible moment. Space allotted and not taken possession of by the arrival of goods or otherwise, to the satisfaction of the Executive Committee, on or before May 20, may be assigned to other exhibitors. Patent medicines, nostrums and all articles of an offensive character, or not properly coming under the head of *Railway Appliances*, will be excluded from the Exposition. Space assigned and not fully or properly occupied may be otherwise assigned by the Executive Committee.

##### RULE V.

Exhibitors will be furnished original and duplicate cards or tags describing each article and indicating whether it is entered for exhibition only, or for competition also. The duplicate card will be conspicuously attached to the article which it describes, and the original must be retained by the exhibitor, and be presented as his order for the delivery of the article specified, at the close of the Exposition.

## RULE VI.

SECTION 1. Committees of awards, or juries, for the several classes, will be announced to exhibitors in due time, the desire of the Commissioners being to organize them with great care, from persons entirely disinterested, and yet qualified by education and experience to serve intelligently and satisfactorily. Exhibitors or their representatives in attendance will be notified of the date of examination of their exhibits in advance of such examination.

SEC. 2. The jury for each class will consist of three persons, and awards will be based upon examinations and tests made in the most thorough possible manner.

SEC. 3. Juries will award medals only to the most meritorious exhibits in each class, and where but one exhibit is entered in any class, no award will be made, unless in the unanimous opinion of the jury, approved by the Commissioners, it is worthy of award, notwithstanding the absence of competing exhibits, and they may refuse to award a prize in any case where the article falls below a proper and reasonable standard of excellence.

SEC. 4. Juries will confine their official examinations to exhibits in position at the Exposition Building and entered for prizes. No examinations will be made elsewhere without written authority from the Executive Committee, which shall be attached to and filed with their report. When juries have reached a decision, the same shall be at once reduced to writing and filed with the Secretary. Upon the approval of jury reports by the Board, premium badges will be issued to the successful exhibitor, and conspicuously attached to the articles on which awards are made.

SEC. 5. Should any juror, either before entering upon an examination, or while it is in progress, die, or become from any cause incapacitated from serving, the Executive Committee shall select another.

SEC. 6. There will be no appeal from the decision of the juries, except in cases where the award is claimed to have been made in violation of the printed rules, and the Commissioners reserve the right to vacate the decision of a jury when so made.

SEC. 7. Expert tests will be made where a majority of the exhibitors in a class, exhibiting articles intended for a like purpose, make the request,—such request to be filed with the Secretary on or before April 1. The expense of expert tests to be borne by the competitors requesting them.

## RULE VII.

The driving engines will be in operation one week previous to the opening of the Exposition, and exhibitors of machinery in motion will be required to have it in running order on the day of opening.

## RULE VIII.

No article on exhibition can be removed from any department during the Exposition.

## RULE IX.

A police force will be in attendance upon the premises, day and night, but all articles on exhibition will be at the risk of the owner.

Insurance against loss by fire will be effected by the Executive Committee in behalf of all exhibitors who apply and pay for same.

## RULE X.

In order to preserve the general harmony of the Exposition, and to make the display as attractive as possible, the Commissioners reserve the right to direct the general arrangement of all articles on exhibition, and to regulate the dimensions of all signs and advertisements.

## RULE XI.

SECTION 1. Each exhibitor may procure for such employes as may be necessary for the care of his exhibit, season coupon tickets at \$5 each, said tickets to be registered and numbered at the Secretary's office.

SEC. 2. Every ticket of general admission will be registered, and taken up and forfeited if presented by any other person than the one to whom it is issued.

## RULE XII.

SECTION 1. All articles upon which the freight has been prepaid, will be taken in charge by the Executive Committee and deposited in the Exposition Building at the expense of the exhibitor when so desired.

SEC. 2. All articles exhibited must be removed from the Building within seven days after the close of the Exposition, and the Executive Committee will store such as may not be removed within this time at the exhibitor's expense, the building being required for other purposes after July 1.

## INCORPORATION.

THE Jackson Coal Railroad Company was chartered at Harrisburg, Penn., on the 26th ult., with a capital of \$100,000. It is to run from Lake township to Pine township, Mercer county, a distance of ten miles.

A CERTIFICATE of incorporation was filed at Albany, N. Y., on the 24th ult., of the Brooklyn and Queens County Railroad Company, capital \$3,500,000, to run from Fulton Ferry, Brooklyn, to the New York, Woodhaven and Rockaway Railroad, in the town of Jamaica—length of road nine miles; also of the Long Island City and Manhattan Beach Railroad Company; capital, \$50,000.

A CHARTER was granted at Harrisburg, Penn., on the 24th ult., to the Pennsylvania, Virginia and Ohio Railway Company, the line of which runs from the mouth of Miller's Run, South Fayette township, Allegheny county, through Washington county, to the dividing line between Pennsylvania and West Virginia, a distance of fifteen miles; capital stock, \$150,000, held principally by Pittsburg capitalists.

THE Susquehanna and Alleghany Railroad Company was chartered at Harrisburg, Penn., on the 27th ult. Its length will be 150 miles, to start from near Punxsatawney, Jefferson county, and run through the counties of Indiana, Clearfield, Clinton, Lycoming, and Union. Its capital is \$1,500,000, and it will be owned by Philadelphia and New York capitalists. W. H. Brown will be president, with headquarters at Philadelphia.

THE merger of the Delaware Western and the Baltimore and Philadelphia railroads was filed in the State Department at Harrisburg, Penn., on the 26th ult. The new company will be known as the Baltimore and Philadelphia

Railroad Company. The capital stock is \$5,000,000. The following are the officers: James B. Washington, president, Allegheny; Robert Garrett, vice-president, Baltimore; William H. Ijams, treasurer, Baltimore; John C. Farra, secretary, Wilmington, Del.

## ORGANIZATION.

THE officers of the Scioto Valley Railroad Company, elected on the 24th ult., are as follows: President, Wm. Adams; vice-president, W. W. Franklin; secretary, Isaac E. Gates; treasurer, J. Robinson.

THE officers of the Memphis and Little Rock Railroad Company elected on the 27th ult., are: President, R. C. Hayes, of St. Louis; secretary, J. W. Goodwin; treasurer, A. H. Calf, of New York; assistant secretary and treasurer, D. S. H. Smith.

THE directors of the Lehigh and Wilkesbarre Coal Company elected on the 22d ult., are: President, Henry S. Little; directors, Franklin B. Gowen, Theodore F. Randolph, Edward C. Knight, John Kean, Franklin A. Comly and B. Williamson.

THE directors of the Pittsburgh and Castle Shannon Railroad Company, elected on the 20th ult., are: John H. Ortman president, Walter Chess, E. Rohrkaste, S. Kaufman, P. F. Schuman, Wm. Loeffler, C. Kohlmeier, F. N. Stucky, S. Gallinger, M. D. Hays, B. J. Stenger.

THE directors of the Bedford and Bridgeport Railroad Company, elected on the 20th ult., are: John P. Green president, R. D. Barclay, W. W. Barclay, John Cessna, J. N. DuBarry, John G. Hartley, Strickland Kneass, Wistar Morris, George B. Roberts, S. L. Russell, N. Parker Shortridge, Edmund Smith and J. Price Wetherill.

THE directors of the Mifflin and Center County Railroad Company, elected on the 20th ult., are: J. N. DuBarry president, Alexander Biddle, G. W. Elder, John P. Green, Strickland Kneass, Samuel Marloy, James H. Maln, Wistar Morris, G. B. Roberts, N. Parker Shortridge, Edmund Smith, J. Price Wetherill and Henry D. Welsh.

At the annual meeting of the stockholders of the Locust Mountain Coal and Iron Company, held in Philadelphia on the 26th ult., the following board of directors was elected: John Biddle, Jacob P. Jones, Israel Morris, Charles Hartshorne, William F. Jones, Israel W. Morris and Richard H. Downing. The officers are: President, John Biddle; Secretary and Treasurer, Charles Mirton, Jr.

## CONSTRUCTION.

THE Chicago and Indianapolis Air Line will be opened for business about April 1.

It is expected that the Scioto Valley Railroad extension to Fort Wayne, Ind., will be located in a few days.

THE Rochester and Pittsburgh Railroad Company will run trains to Du Bois, Penn., by the 15th of March.

THE last rail on the Pemigewasset Railroad



main line has been laid. A few side tracks now await construction.

THE Pennsylvania Railroad Company is widening its roadbed from Glenloch to Philadelphia for an additional track.

THE last spike in the Clark's Fork Division of the Northern Pacific Railroad was driven at Weeksville, Montana, on the 26th ult.

THERE are only four miles of the Arnot and Pine Creek railroad remaining unfinished. The cars now run to Hoytville, where is situated the largest tannery in the world.

It is expected that the track of the Mexican Central Railway will reach the city of Aguas Callientes in April. The road is already more than fifty miles north of Lagos.

EXPLORATIONS have been commenced near Dorchester Bridge over the line of the Quebec, Montmorenci and Charlevoix Railway, under the direction of Mr. L. A. Roberge, contractor

WORK is to be pushed energetically on the Beech Creek, Clearfield and Southwestern Railroad. It is intended as an important feeder to the Jersey Shore, Pine Creek and Buffalo Railroad for soft coal destined for Buffalo.

THE bill authorizing the Philadelphia, Wilmington and Baltimore Railroad Company to widen and straighten its tracks, and build eight miles of sidings, and construct a branch from State road siding to Wilmington, for freight business, passed the legislature of Delaware on the 27th ult.

THE length of the Pennsylvania Railroad Company's track laid within the bounds of the State of Pennsylvania covers 2,200 miles. This does not include side tracks or double-tracked portions of its lines. The total length of the lines owned, leased and controlled east of Pittsburgh is 3,859.92, including 406 miles of canals and ferries.

AN engineering party has begun the construction of a branch of the "Sunset" Railroad from San Antonio, Tex., northwest to connect with the Texas and Pacific Railroad, about 200 miles distant. The road will run through Kendall, Kerr, Gillespie, Mason, McCullough, Callahan and Shackelford counties, and is to be constructed immediately. This will open up a vast and rich farming and stock country.

THE bill giving the Baltimore and Ohio Railroad Company an additional time of ten months in which to complete their New York extension through Delaware was passed by the legislature of that State on the 26th ult., after it was amended so as to change the name of the Delaware Western Railroad to the Baltimore and Philadelphia Railroad, in conformity with the articles of merger previously filed at Harrisburg and Dover.

IN a return presented to the Dominion Parliament on the 24th ult. the progress of the Canadian Pacific Railway construction for the past year is recorded. On the Eastern section forty miles of track have been laid. The Prairie section has been completed to a point 585 miles west of Winnipeg, and on the Southwestern and Pembina Mountain, Winnipeg and Selkirk, and other branches, material progress was made. The permanent location of the line is completed to Fort Garry.

## THE COST OF ADVERTISING

For any responsible advertiser, making application in good faith, we prepare and furnish a written estimate, showing the cost of any proposed advertising in the leading Newspapers of the United States and Dominion of Canada.

We prepare and exhibit printed proofs of any proposed advertisements.

For the preparing of estimates no charge is made, and the applicant is placed under no obligation to transact his advertising business through us unless it appears to him that by doing so he will best advance his own interests.

A copy of the advertisement, a list of the papers, the space the advertisement is to occupy and the time it is to appear, should all be given with the application for an estimate of the cost.

When an advertiser does not know what he wants or what he ought to do, he can designate some sum of money within which he wishes to limit his expenditure; this will enable us to prepare for him such a list of papers as will be the best for his purpose, within the limits which he prescribes.

Send 25c. for 100-page pamphlet. Address

## GEO. P. ROWELL & CO.

Newspaper Advertising Bureau,

( Printing House Square,  
Opposite Tribune Building, )

10 Spruce St., New York.

## NEW YORK AND NEW ENGLAND RAILROAD.

The only Line running Pullman Palace cars between

**BOSTON and NEW YORK**

(via Hartford and New Haven).

Express train leaves Boston 8:45 A. M., arrives at New York 4:22 P. M.

## THE NORWICH LINE

—BETWEEN—

**BOSTON AND NEW YORK.**

Steamboat train leaves Boston 6:30 P. M. arrives at New London at 10:00 P. M., connecting with the new steamer **City of Worcester**, Monday, Wednesdays and Fridays, and **City of New York**, Tuesdays, Thursdays and Saturdays. Returning, steamer leaves Pier 40, North River, New York, at 4:30 P. M., connecting at New London with train leaving at 4:05 A. M., arriving in Boston at 8:00 A. M. Good night's rest on the boat.

Ask for Tickets via N. Y. & N. E. R. R.

Office 322 Washington st., Depot foot Summer st., Boston.

M. FELTON, JR.,

Gen'l Manager.

A. C. KENDALL,

Gen'l Pass. Agent.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs**, as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,

General Manager.

J. T. CLARK,

General Sup't.

A. V. H. CARPENTER,

Gen. Pass. and Tick. Agt.

GEO. H. HEAFFORD,

Ass't Gen. Pass. Agt.

## HOUSATONIC RAILROAD.

THE ONLY LINE RUNNING  
THROUGH CARS

Between New York, Great Barrington, Stockbridge, Lenox, and Pittsfield—the far-famed resorts of the

## Berkshire Hills

of Western Massachusetts—the "Switzerland of America."

Two through trains daily between New York City and all points on the Housatonic Railroad, from the Grand Central Depot via the New York, New Haven, and Hartford Railroad at 11:00 A. M. and 3:30 P. M.

Descriptive Guide-Book sent free by mail upon application to the General Ticket Agent.

H. D. AVERILL, Gen'l Ticket Agent.

W. H. YEOMANS, Superintendent.

General Offices Bridgeport, Ct. Dec. 27, 1882.

## "Progressive and Reliable."

"Under its present management,

## THE ERIE RAILWAY

is become the most progressive and reliable Trunk Line in America."—*Cleveland Leader.*

## THE ERIE

is the **SAFE and COMFORTABLE** Line between the East and West. Its equipment is unsurpassed—**Pullman Coaches, Westinghouse Air-Brake, Miller Safety Platform, Cars Lighted by Gas, Steel Rails, Double Track.**

The scenery along the line includes such great Works of Nature as **Niagara Falls, Watkin's Glen, Portage Falls and Gorge, the Great Lakes and the Lakes of Central and Western New York**, making it truly the "LANDSCAPE ROUTE OF AMERICA."

E. S. BOWEN, Gen. Supt., N. Y.

JNO. N. ABBOTT, Gen'l Pass'r. A'gt., N. Y.

## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,276	224,921	261,439	300,155	278,439	246,062	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,930	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,704,038	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,409	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,393	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,022	203,562	2,702,762
1882.....	210,455	209,708	208,981	207,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,954	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,478,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,056	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,418	20,454,494
1881.....	1,307,948	1,034,821	1,574,149	1,574,371	1,079,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,810,133	1,905,090	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	1,259,946	1,538,491	1,529,946	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,569,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,029	392,921	432,615	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,796	4,973,052
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	243,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	231,320	211,014	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	624,728	6,206,812
1882.....	491,914	412,987	535,055	509,917	614,298	573,462	495,797	574,040	595,306	630,598	512,905	626,728	6,349,657
<b>HANNIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,893	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,563	249,252	239,891	2,303,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	733,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	624,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	102,085	203,077	200,064	199,846	190,125	272,114	247,332	225,678	200,450	192,622	2,487,569
1882.....	195,824	175,755	202,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	205,212	2,641,075
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,093	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	230,916	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,312	2,403,224
1882.....	159,676	158,596	148,166	141,957	134,378	136,184	135,174	137,475	157,874	267,433	295,110	307,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	261,828	3,408,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	240,821	280,524	299,573	261,200	240,764	249,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,406,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,212	1,643,958	1,643,151	1,592,544	1,661,812	1,786,417	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	503,683	667,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	11,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	126,984	162,984	162,210	312,705	412,024	393,266	434,085	534,363	583,555	475,610	439,724	4,454,576
1882.....	245,369	268,935	373,141	451,023	6								



## RAILROAD, STREET RAILWAY AND CANAL DIVIDEND STATEMENT

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Fe...100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S...100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point...100	1,232,200	semi-an	Aug. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchest & Phil. pref...100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv...100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee & Mt M*100	225,000	semi-an	Jan. '82 3	Lowell & Andover...100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington & Weld'n...100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio...100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Jan. '82 2 1/2	Will., Col., & Aug.....100	960,000	semi-an.	Jan. '83 3
" " pref...100	5,000,000	semi-an	Nov. '83 3	Maine Central.....100	3,603,300	semi-an.	Feb. '83 2 1/2	Winchester & Poto'c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manchester & Law... 00	1,000,000	semi-an.	Nov. '82 5	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	Manhattan.....100	13,000,000	.....	Jan. '83 1 1/2	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	" " 1st pref...100	6,500,000	q'arterly	Jan. '83 1 1/2	HORSE-POWER R. R.			
Bos. & N. Y. Air Line pf...100	2,795,227	q'arterly	June '82 1	" " 2d pref...100	6,500,000	q'arterly	Jan. '83 1 1/2	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos., Cl. F. & N. B. pref...100	1,750,100	semi-an	Oct. '82 3 1/2	Marq. Hout. & Ont.....100	2,306,600	.....	Feb. '83 4	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Bos., Conc. & Mont. pf*100	800,000	semi-an	Nov. '82 3	" " pref...100	2,259,026	semi-an.	Feb. '83 4	Balt., Cat. & El. Mills...100	80,000	semi-an.	Jan. '83 2 1/2
Boston and Lowell.....500	3,940,000	semi-an	Jan. '83 2 1/2	Massawippi*.....100	400,000	semi-an.	Feb. '83 3	Bleecker St. & Ful. F'y...100	900,000	semi-an.	July '82 1/2
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Boston & Providence.....100	4,000,000	semi-an	Nov. '82 4	Michigan Central.....100	18,738,204	.....	Feb. '83 2	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Middlesex Central.....100	280,000	semi-an.	Feb. '83 3	B'way & 7th Av. (N. Y.)100	2,100,000	q'arterly	Oct. '82 2
Bos., Revere B. & Lynn...100	419,400	semi-an	Jan. '83 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5	B'klyn & Hunter's Pt.100	400,000	semi-an.	Oct. '82 6
Buffalo, N. Y. & Erie*100	950,000	semi-an	Dec. '82 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Buff., Pitts. & Erie..... 50	1,457,000	.....	Jan. '83 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2	Bushwick (Brooklyn)100	309,000	semi-an.	Oct. '82 6
Camden & Atlantic..... 50	377,400	q'arterly	Nov. '82 3	Mobile & Montgomery... 50	3,022,517	semi-an.	Feb. '80 2 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
" " pref... 50	880,650	q'arterly	Nov. '82 4	Morris and Essex..... 50	15,000,000	semi-an.	Jan. '83 3 1/2	Can. Park N. & E. Riv.100	1,800,000	q'arterly	Oct. '82 6
Camden & Burl. Co.....100	381,925	semi-an	Jan. '83 3	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6	Christoph'r & Tenth St...100	650,000	semi-an.	Aug. '82 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Nashua and Lowell.....100	800,000	semi-an.	Nov. '82 4	Citizens' (Phil.)..... 50	192,500	q'arterly	Jan. '82 2 1/2
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua & Rochester...100	1,305,800	semi-an.	Oct. '82 1 1/2	Citizens' (Pbg.)..... 50	200,000	annual	.....'80 14 1/2
Catawissa*..... 50	1,159,500	annual	Oct. '82 2 1/2	Nashv. & Decatur.....100	1,827,000	semi-an.	June '82 3	Coney Island & Bklyn...100	500,000	semi-an.	Oct. '80 5
" " pref..... 20	2,200,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2	Continental (Phil.)... 50	580,000	semi-an.	Jan. '83 6
" " new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Naugatuck.....100	2,000,000	semi-an.	Jan. '83 5	D. Dock, E. B'way & Batro100	1,200,000	q'arterly	Aug. '82 4
Cayuga and Susq*... 50	589,110	semi-an	Jan. '83 4 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sept. '82 3	Eighth Av. (N. Y.)...100	1,000,000	q'arterly	Oct. '82 3
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Feb. '83 1 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Oct. '82 1	42d St. & G. St. Ferry100	747,000	semi-an.	May '82 6
" " pref...100	769,600	semi-an	Feb. '83 3 1/2	New London North'n*100	1,500,000	q'arterly	Jan. '83 1 1/2	Frankf. & Southw (Ph) 50	600,000	q'arterly	Oct. '82 6
Central of Georgia.....100	7,500,000	semi-an	Dec. '82 4	N. Y. Cen. & Hud. R...100	89,428,330	q'arterly	Jan. '83 2	Germantown, (Ph.)... 50	1,540,902	q'arterly	Jan. '83 2 1/2
Central of New Jersey100	18,563,200	q'arterly	July '76 2 1/2	N. Y. and Harlem.....100	7,050,000	q'arterly	Jan. '83 4	Girard College (Ph.)... 50	500,000	semi-an.	July '71 3
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	" " pref...100	1,500,000	annual	Apr. '82 3	Grand St. & Newton...100	170,091	semi-an.	July '81 2 1/2
" " pref... 50	411,550	semi-an	Jan. '83 3	" " City Line..... 100	10,000,000	q'arterly	Jan. '83 1 1/2	Green & Coates St. (Ph) 50	76,650	q'arterly	Jan. '83 3
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	N. Y., Lack. & West...100	77,087,600	.....	.....	Heston, Mantauk & P'm 50	299,381	semi-an.	Jan. '75 4
Cheshire preferred.....100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West...100	7,987,500	annual	Jan. '83 6	Highland.....100	600,000	semi-an.	Jan. '83 4
Chicago and Alton.....100	11,181,741	semi-an	Mar. '83 4	" " pref...100	7,987,500	semi-an.	Jan. '83 5	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
" " pref...100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart...100	15,500,000	q'arterly	Feb. '83 2	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
Chi., Burl. & Quincy...100	69,508,105	q'arterly	Mar. '83 2	N. Y., Prov. & Boston100	3,000,000	q'arterly	Oct. '82 3	Malden and Melrose...100	165,000	.....	.....
Chi., Iowa & Nebras*...100	3,916,200	semi-an	Jan. '83 4	Niag. Bridge & Canand*100	1,000,000	semi-an.	Oct. '82 3	Metropolitan (Bost.)... 50	1,500,000	semi-an.	Jan. '83 4
Chi., Mil. & St. Paul...100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Mar. '83 3	Middlesex (Boston)...100	650,000	semi-an.	Nov. '82 3 1/2
" " pref...100	14,401,483	semi-an	Oct. '82 3 1/2	" " pref...100	1,000,000	semi-an.	Mar. '83 3	N. Y., Bay Ridge & Jam100	150,000	.....	Oct. '78 7
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	Norfolk & Western pref.100	15,000,000	q'arterly	Dec. '82 1	Ninth Av. (N. Y.)...100	797,320	.....	.....
" " pref...100	21,525,353	q'arterly	Dec. '82 2	North Pennsylvania..... 50	4,527,150	q'arterly	Feb. '83 1 1/2	Orange & Newark.....100	282,555	.....	.....
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4	People's (Phila.) pref. 25	115,250	.....	July '82 2
Chi. and West Mich.....100	6,151,000	semi-an	Feb. '83 3	Northern N. Hampsh100	3,068,400	semi-an.	Dec. '82 3	Philadelphia City... 50	475,000	semi-an.	July '82 4
Chi. St. P., M. & O. pref...100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern Pacific pref100	41,099,132	.....	Jan. '83 11.1	Phila. and Darby... 20	200,000	semi-an.	July '81 3 1/2
Chin., Ham. & Dayton.....100	3,500,000	semi-an	Jan. '83 3	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5	Phila. & Grey's Ferry. 50	308,000	semi-an.	Jan. '82 6
C. Ind., St. L. & Chi.....100	6,000,000	q'arterly	Jan. '83 1 1/2	Oregon & Transcont'l...100	40,000,000	q'arterly	Jan. '83 1 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2	Ridge Avenue (Ph.)... 50	420,000	semi-an.	Oct. '81 11
Clev., Col., Cin. & Ind...100	14,991,800	.....	Feb. '83 2	Oregon R'way & Nav...100	13,000,000	q'arterly	Feb. '83 2 1/2	Second Avenue (N. Y.)100	1,109,500	semi-an.	July '82 4
Clev. & Pittsburg* 50	11,244,336	q'arterly	Mar. '83 1 1/2	Oswego & Syracuse.....100	1,320,400	semi-an.	Feb. '83 4 1/2	Second & Third St. (Ph) 50	771,076	q'arterly	Jan. '83 4
Columbus & Xenia*... 50	1,786,200	q'arterly	Dec. '82 2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	17th & 19th sts (Ph)... 50	250,000	semi-an.	July '81 3
Col., Hock. Val. & Tol...100	10,316,500	.....	Jan. '83 2 1/2	Paterson & Hudson*...100	630,000	semi-an.	Jan. '83 4 1/2	Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82 5
Concord..... 50	1,500,000	semi-an	Nov. '82 5	Paterson & Ramapo..... 50	248,000	semi-an.	July '82 4	Somerville (Boston)100	113,000	semi-an.	Nov. '82 3
Concord and Ports*...100	350,000	semi-an	Jan. '83 3 1/2	Pember. & Hightst'n*... 50	342,150	semi-an.	Jan. '83 3	South Boston..... 50	600,000	semi-an.	Jan. '83 4
Conn. & Passump. Riv...100	2,244,400	semi-an	Feb. '83 3	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2	Third Avenue, N. Y...100	2,000,000	q'arterly	Aug. '82 5
Connecticut River.....100	2,100,000	semi-an	Jan. '83 4	Pennsylvania Co. .... 50	20,000,000	annual	Dec. '82 4	13th and 15th sts. Ph 50	334,529	q'arterly	Jan. '83 4
Cumberland Valley..... 50	1,292,950	q'arterly	Jan. '83 2 1/2	Peoria & Bureau Val*100	1,200,000	semi-an.	Feb. '83 4	23d street, N. Y.....100	600,000	semi-an.	Aug. '82 4
" " 1st pref 50	247,900	semi-an	Oct. '82 4	Philadelphia & Erie*... 50	7,013,700	semi-an.	.....	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
" " 2d pref 50	243,000	semi-an	Oct. '82 4	" " pf'd 50	2,400,000	semi-an.	Jan. '75 4	Union, Phila..... 50	1,005,000	semi-an.	Jan. '82 7
Danbury & Norwalk..... 50	600,000	.....	Oct. '82 2 1/2	Phil. Ger. & Norrist'm* 50	2,231,900	q'arterly	Dec. '82 3	West Philadelphia..... 50	750,000	semi-an.	July '77 10
Dayton and Mich.*... 50	2,402,573	semi-an	Oct. '82 1 1/2	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2				
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	" " pref. 50	1,551,800	q'arterly	July '76 3 1/2				
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	Phila. and Trenton...100	1,259,100	q'arterly	Jan. '83 2 1/2				
Del. & Bound Brook*100	1,652,000	q'arterly	Feb. '83 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4				
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Pittsb., Ft. W. & Chi*100	19,714,285	q'arterly	Jan. '83 1 1/2				
Denver & Rio Grande...100	29,160,000	q'arterly	Jan. '84 1 1/2	" " Special Imp. 100	6,770,900	q'arterly	Jan. '83 1 1/2				
Detroit, Lans. & Nor...100	1,825,600	semi-an	Feb. '83 3	Pittsfield & N. Adams...100	450,000	semi-an.	Jan. '83 2 1/2				
" " pref...100	2,503,380	semi-an	Feb. '83 3 1/2	Portl., Saco & Portsmouth100	1,500,000	semi-an.	Jan. '83 3				
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Providence & Worces...100	2,000,000	semi-an.	Jan. '83 3				
East Pennsylvania*... 50	1,709,550	semi-an	Jan. '83 3	Rensselaer & Saratog*100	7,000,000	semi-an.	Jan. '83 4				
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Richmond & Dauv...100	5,000,000	q'arterly	Aug. '82 2				
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Petersbro100	1,009,300	semi-an.	Aug. '82 2				
Eel River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Roch. & Genesee Val*100	555,200	semi-an.	Jan. '83 3				
Elmira & Williamspt* 50	500,000	semi-an	Nov. '82 1 1/2	Rome Water. & Ogdens100	5,293,900	.....	Jan. '83 3				
" " pref. 50	500,000	semi-an	Jan. '83 3 1/2	Rutland preferred..... 100	4,000,000	semi-an.	Sept. '82 1				
Erie and Pittsburg*... 50	1,998,400	q'arterly	Dec. '82 1 1/2	Spryten Du'vil & Pt. M.100	989,000	semi-an.	Jan. '83 4				
Evansville & Terre H...100	100,000	semi-an	Jan. '83 6b	St. L., Alt. & T. Haute.100	2,300,000	.....	.....				
Fitchburg.....100	4,500,000	semi-an	Jan. '83 3	" " pref...100	2,468,406	.....	Dec. '82 4				
F. & P. Marquette pf...100	6,500,000	semi-an	Jan. '83 3 1/2	St. L. & S. Fran. 1st pref100	4,854,000	semi-an.	Feb. '83 3 1/2				

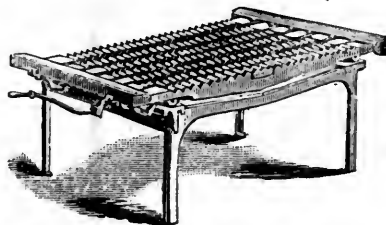
**WATER TUBE STEAM BOILERS.**

**THE BABCOCK & WILCOX CO.,**  
30 Cortlandt St, New York.  
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**W. RYDER'S**  
**PATENT**

**Practical Shaking Grate Bar,**

OFFICE: 134 Water Street,  
New York.



The W. Ryder Double-Acting Grate Bars are so constructed as to rest upon a frame with friction rollers, and by means of a lever attached to the front rocking bar, a reverse or reciprocal motion is produced in each bar which effectually breaks up the clinkers, and removes all the ashes from the bottom of the furnace.

By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop its working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.



**BAUGHMAN'S**  
**PATENT**

**STORM-PROOF RAILWAY SIGNALS.**

—FOR—

Stations, Crossings, Drawbridges, Switches, Caboose and Rear-of-Train, Etc.

Manufactured by

**BAUGHMAN & MARKEY,**  
ALBION, INDIANA.

**BRUSHES**

For CAR BUILDERS' and RAIL-  
ROAD CO.'S Purposes.

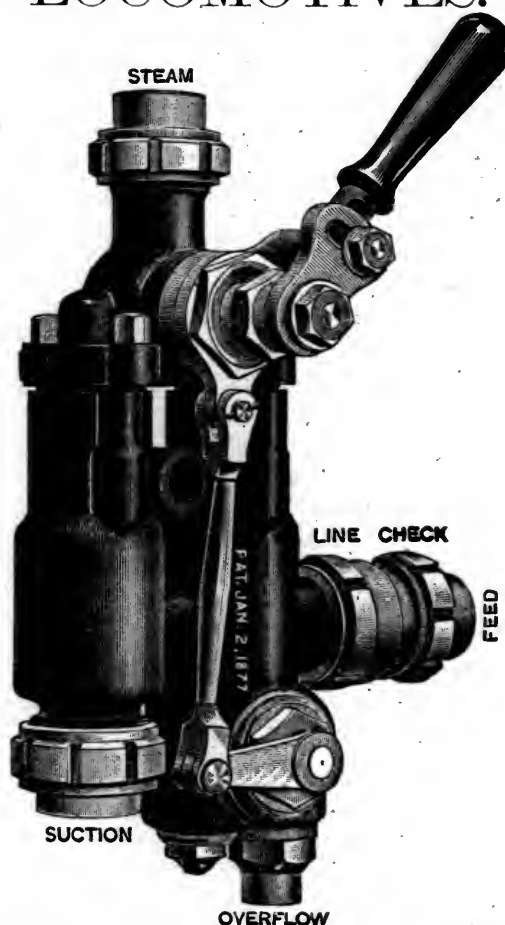
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**HANCOCK INSPIRATOR**  
—FOR—  
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**HANCOCK INSPIRATOR CO.,**  
No. 34 Beach Street,  
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For Packing Journal Boxes of Cars.

NATIONAL RAILWAY PATENT WASTE CO.

240 Broadway. - - New York

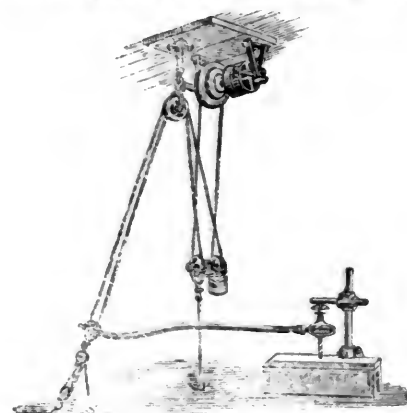
Cost of packing Boxes with Hulls and Oil for nine months, \$1.60; cost of packing Boxes with Cotton-waste and Oil for nine months, \$4.08.

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**CAR**  
**PUSHER**

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ONE MAN with it can easily  
move a loaded car.  
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DEALER IN RAILROAD SUPPLIES,  
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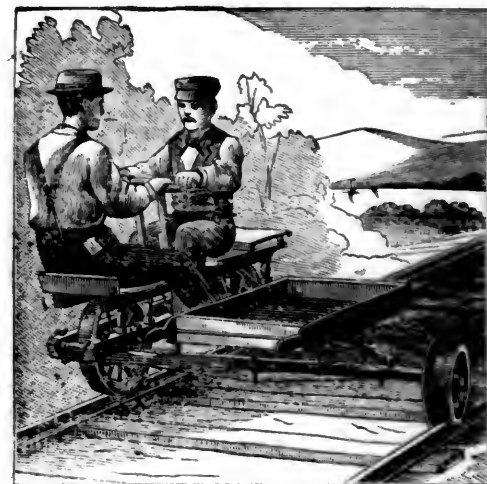


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for TAPPING and putting in STAY BOLTS, etc., etc.

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**Sheffield Telegraph & Light Section**  
**HAND CAR.**



Our two-man car introduced during the present year on a large number of prominent roads, is giving entire satisfaction. Full particulars and descriptive circulars sent on application.

**Sheffield Velocipede Car Co.**  
Three Rivers, Mich.



## FINANCIAL DEPARTMENT.

## ARE HARD TIMES COMING?

THE Wall Street "bears" are trying to persuade the public generally that the country is going to the bad, and they see portents of evil in almost every occurrence of the day or week. Last week it was the floods on the Ohio River which were going to destroy values of all property. This week it will be the failure of Congress to take off a sufficient amount of taxes and relieve the crippled industries, and next week troubles in the iron trade, and so on with every changing phase of the news. Of course, these views and prophecies are not disinterested. They are uttered for a purpose: to depreciate the value of negotiable property—stocks and bonds in particular.

Are such despondent views justifiable? It may be admitted, to the full extent, that the Ohio River floods have done some damage—half a million, more or less—and it may be admitted, even, that the floods will cause some further damage in the Lower Mississippi Valley; though not nearly as much as the previous year. Against these concurrent adverse circumstances we may set, however, the general drift of prosperity, industry and peace pervading the whole country. It is too early to predict the coming harvest; but so far the crops have sustained no injury; while on the other hand the news from Europe leads us to believe that there will be an increased demand to make up their deficiencies. Year by year the control of our soil is becoming more absolute. In the regions troubled with too much rain, more land is coming under drainage; in the regions troubled with too much drouth, more land is coming under irrigation. The transportation system is becoming more and more developed; and it is generally admitted that America can raise grain and meats at a less cost than European countries.

Prophets of evil are continually predicting that the balance of trade will be against us—that Europe will take away our surplus gold; that Congress will, by its failure to stop the coinage of silver, precipitate a commercial crisis upon the country. All these views are partial; they overlook the great fact that what Europe wants more than our gold is breadstuffs and clothing fibres. Our credit is good in Europe; and in the absence of ready-coined gold, they will be only too glad to take our National, State and corporate securities to a large amount. A wholesome check has been put upon railroad building; so that whatever is done in that direction for the next year or two will be by responsible companies, who will build no more

than the loanable capital of the country can pay for. The tide of immigration, that is of the better class of immigrants, is certain to set in this spring; and it is noteworthy that more tillers of the soil, who are in search of homes of their own, are coming to this country now than at any previous period, while there is less of that class which crowds in the worst portions of our cities, and which helps to fill our grog-shops, jails and workhouses.

The true sources of American wealth and prosperity lie, not so much in our silver mines, nor yet in our shipping commerce, as in the peacefulness with which fifty millions of people can live under one government—a government not imposed upon them from outside—in their willingness to work under the impulse that what they earn and save will remain to them and their children as a possession and enjoyment, without fear of the tax-gatherer, the king or the priest. For any waste and extravagance in their form of government they have themselves to blame, and will themselves apply the remedy. The wave of agrarianism, nihilism and communism, which portends so much trouble to the vested interests and caste system of all the older countries, can find no permanent lodgment here, where every man with the least aspiration and self-denial may hope to become the owner of a homestead, and as much land as he can cultivate.

## Financial Review.

WEDNESDAY EVENING, FEB. 28, 1883.

MONEY on call this forenoon, on stocks as collateral, was  $5\frac{1}{2}$  per cent, and on Government bonds 3 to 4 per cent. In the last hour of business money loaned at  $3\frac{1}{2}$  per cent. on call on stocks. Time money on prime stocks was 5 and 6 per cent.

The postal rates for foreign exchange this morning were  $4.82\frac{1}{2}$ @ $4.85\frac{1}{2}$ . The actual rates were as follows: Sixty days,  $4.81\frac{1}{2}$ @ $4.82$ . Demand,  $4.84\frac{1}{2}$ @ $4.84\frac{1}{2}$ ; Cables,  $4.84\frac{1}{2}$ @ $4.85\frac{1}{2}$ . Commercial bills were  $4.79\frac{1}{2}$ @ $4.80\frac{1}{2}$ . Continental bills were as follows: Francs,  $5.23\frac{1}{2}$ @ $5.22\frac{1}{2}$  and  $5.20$ @ $5.19\frac{1}{2}$ . Reichsmarks,  $94\frac{1}{2}$ @ $95$  and  $94\frac{1}{2}$ @ $95$ . Guilders,  $39\frac{1}{2}$  and  $40\frac{1}{2}$ .

Alas for the new five cent piece! it is now being hawked about the streets and sold by peddlers for six cents as a numismatic curiosity, which it unquestionably is.

The bill introduced in the New Jersey legislature reducing the legal rate of interest to five per cent has been lost in the Senate by a vote of 13 to 6.

The Union Trust Company of New York has been designated by Judge Drummond as the depository for the sum of \$405,789.75, paid by William L. Scott, Charles J. Osborn and John S. Kennedy, upon the first mortgage consolidated bonds of the Columbus, Chicago and Indiana Central Railway Company, and has authorized the Master to distribute to holders of bonds and coupons the amounts due them.

The purchase money to be distributed will pay the coupons and interest and \$778.15 on each unpresented bond in addition, leaving \$221.84 of the principal unpaid.

Judgments were rendered to-day in the Court of Commissioners of Alabama Claims in favor of the claimants in the following cases: Executors of Oliver Moses, deceased, for \$23,750; administrators of Charles Owen, deceased, for \$7,500; Galen C. Moses, for \$2,500. Robert P. Manson, for \$3,750; Frank O. Moses, for \$3,750; executor of George Edge, \$7,500, \$1,111.50 and \$720 (three cases), all with interest from 1861.

The total coinage at the Philadelphia mint, during the present month aggregated 6,265,440 pieces valued at \$1,100,300. This included 40 double eagles, 40 eagles, 40 half-eagles, 40 three-dollar gold pieces, 40 quarter eagles, 1,240 gold dollars, 900,000 silver dollars, 610,000 dimes, 2,224,000 five cent pieces and 2,530,00 cents.

The reduction of the public debt of the United States during the month of February was \$7,630,678.54. The reduction in January was \$13,500,000. The principal cause of the difference is the large quarterly payment for pensions to be made early in March. The amount which has been forwarded to the pension agents, is \$9,781,418.47—the largest sum in any month of the present fiscal year. The ordinary payments from the Treasury for the month have been rather smaller than usual.

At the annual meeting of the Lehigh Coal and Navigation Company, held in Philadelphia on the 27th inst., the report of the President was presented showing a credit to the dividend fund of \$64,011.80 after the payment of all expenses and fixed charges and the payment of two dividends during the year of \$1 per share. This dividend fund, the president explained was the only authority the managers had for declaring a dividend. "This fund," he added, "is kept strong, and last year it amounted to \$535,457." The average cost of all the company's coal lands is \$722 per acre.

The interest-bearing debt of the United States, February 28, 1883, is \$1,354,895,750; debt on which interest has ceased since maturity, \$13,311,945.26; debt bearing no interest, \$513,243,404.17; interest, \$11,091,763.78—total debt and interest, \$1,892,542,863.21. Of the debt bearing interest, \$54,339,850 are bonds bearing interest at five per cent, continued at three and one-half per cent; \$250,000,000 at four and one-half per cent; \$638,971,350 at four per cent; \$297,198,600 at three per cent; \$385,950 refunding certificates, four per cent; \$14,000,000 Navy Pension Fund, four per cent. The debt bearing no interest, consists of: Old demand and legal tender notes, \$346,740,196; certificates of deposit, \$11,340,000; gold and silver certificates, \$148,146,710; fractional currency, \$7,016,498.17. The cash in the treasury amounts to \$306,266,748.78; and the total debt, less cash in treasury, to \$1,586,276,114.43, against \$1,593,906,792.97 on the first of February, 1883, a decrease during the month of \$7,630,678.54, and a decrease since the 30th of June, 1882, of \$102,638,346.29. The cash balance available, March 1, 1883, amounts to \$131,093,986.10.

The gross earnings of the Philadelphia and Erie Railroad in January, 1883, were \$319,720.22, the expenses \$215,411.94, and the net earnings \$104,308.28, against \$86,242.20 in January, 1882, an increase of \$18,066.08.

## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Feb. 27.

	W.21.	Th.22.	F.23.	Sat.24.	M.26.	Tu.27.
Adams Express.....	135	135	133	132		
Albany and Susq. ....	130					
1st mortgage.....	110%					
2d mortgage.....						
American Express... 91	90%	90%	90	90%		
Burl., C. R. & Nor. ....	101		100%	100%		
1st mortgage 58. ....						
Canada Southern... 64%	65%	64%	65%	66		
1st mortgage guar. ....	94	94%	94%	94%		
Canadian Pacific... 59	58%	58%	58%	58%		
Central of N. Jersey 68%	71%	69%	70%	71%		
1st mort. 1890. ....	113		113%			
7s, consol. ass. ....		109%		110		
7s, convertible ass. ....			109%			
7s, Income. ....	105%	105%	106	106		
Adjustment.....						
Central Pacific..... 79%	80%	80%	80%	80%		
6s, gold.....	113%					
1st M. (San Joa.) ....						
1st M. (Cal. & Or.) ....						
Land grant 6s.....		105%				
Chesapeake & Ohio. 21	20%	20	21	21		
1st pref.....	30%	30	29%			
2d pref.....	23%	23%	23%	22%		
1st mort., series B. ....	90%	90%	90%	90%		
Chicago and Alton. ....	130	130%	130			
Preferred.....						
1st mortgage.....						
Sinking Fund.....						
Chi., Bur. & Quincy 116%	117%	117	117%	118%		
7s, Consol. 1903. ....			125%	125%		
Chi., Mil. & St. Paul 98%	100	99	99%	101%		
Preferred.....	117%	117%	118	119%		
1st mortgage, 8s. ....				130%		
2d mort., 7 3-10s. ....				121		
7s, gold.....						
1st M. (La. C. div) ....			118	118		
1st M. I. & M. div. ....						
1st M. (I. & D. ext.) ....						
1st M. (H. & D. div.) ....	116					
1st M. (C. & M. div.) ....						
Consolidated S. F. 123		122%		122%		
Chi. & Northwestern 129	130%	129%	131%	132%		
Preferred.....	144%	144%	141%	145%		
1st mortgage.....		105				
Sinking Fund 6s. ....						
Consolidated 7s. ....						
Consol. Gold bo'ds ....						
Do. reg.....	124					
Chi., R. Isl. & Pac. 119%	121	120%	120%	122		
6s, 1917, c.....	124%			121%		
Clev., Col., Cin. & Ind. 70	70	70%		73		
Clev. & Pittsburg gr. ....						
7s, Consolidated.....						
4th mortgage.....						
Col., Chi., & Ind. Cent 5%	5%	5	5%	5%		
1st mortgage.....						
2d mortgage.....						
Del. & Hud Canal. 105%	107%	107%	106%	107		
Reg. 7s, 1891. ....	114		114%			
Reg. 7s, 1884. ....			102%			
7s, 1894. ....				117		
Del., Lack. & Western 119%	121	120%	121%	122%		
2d mortgage 7s. ....						
Consol. 1907. ....						
Erie Railway.....						
1st mortgage.....						
2d mort. 5s, ext. ....						
3d mortgage.....						
4th mort. 5s, ext. ....						
5th mortgage.....						
7s, Consol. gold. ....	129			128%		
Great West. 1st mort. ....		104%	104%			
2d mortgage.....			100			
Hannibal & St. Jo. ....						
Preferred.....	82	81%		81%		
8s, Convertible.....			108			
Houston & Tex. Cen. ....						
1st mortgage.....						
2d mortgage.....			122	122		
Illinois Central... 142	143	142	142%	143%		
Lake Shore & Mich So 107%	108%	107%	108%	109%		
Consol. 7s.....	121%					
Consol. 7s, reg.....			125%	125%		
2d Consolidated.....						
Loh. & W. B. con. ass 102		102				
Long Dock bonds.. ....						
Louisville & Nash. 52%	53%	52%	52%	54		
7s, Consol. reg.....						
Manhattan.....		49		46		
1st pref.....		88				
Met. Elevated.....				80%		
1st mortgage.....	97%	95%				
Michigan Central. 90%	92	91%	92	93%		
7s, 1908. ....			125			
Morris & Essex.....	120			122%		
1st mortgage.....			135%	136%		

2d mortgage.....				113%		
7s of 1871.....						
7s, Convertible.....						
7s, Consolidated.....	122	121%	121%	121%	121%	
N. Y. Cen. & Hud. R. 124%	125%	125%	125%	126%		
6s, S. F. 1883.....		101%		102		
6s, S. F., 1887.....	107%			107		
1st mortgage.....			129%	129%		
1st mortgage, reg.....				129%		
N. Y. Elevated.....				116	115%	
1st mortgage.....						
N. Y. & Harlem.....				200		
Preferred.....						
1st mortgage.....						
1st mortgage, reg.....						
N. Y. Lake Erie & W. 35	35%	35%	35%	36%	37	
Preferred.....						
2d Consolidated.....	95%	95	95%	96%	96%	
New 2d 5s fund.....				94%	94	
N. Y., N. Hav'n & Hart.....			174		174	
North Mo. 1st mort.....						
Northern Pacific... 45%	47%	47%	47%	48%		
Preferred.....	80%	82%	82%	82%	83%	
Ohio & Mississippi. 32	30%	31%		32		
Preferred.....						
2d mortgage.....						
Consolidated 7s.....	116	116%				
Consol. S. Fund.....	116	116				
Pacific Mail S. S. Co 40	41%	40	40%	41		
Pacific R. R. of Mo. ....						
1st mortgage.....		105		105		
2d mortgage.....						
Panama.....						
Phila. & Reading... 50%	52%	51%	51%	52%		
Pitts. Ft. W. & Chi. gtd.....						
1st mortgage.....	135					
2d mortgage.....						
3d mortgage.....			130			
Pullman Palace Car 118%	119%	118%	118%	119		
Quicksilver Min'g Co.....						
Preferred.....	41%		41	41%		
St. Louis & San Fran.....						
Preferred.....	48					
1st Preferred.....						
St. L., Alt'n & T. H. 65	67	67		68		
Preferred.....	95	97%	97		98	
1st mortgage.....						
2d mort. pref.....						
Income bonds.....		105	105			
St. L., Iron Mt. & S. ....						
1st mortgage.....						
2d mortgage.....	108		108%	108%		
Toledo and Wabash. ....						
1st mortgage.....						
2d mortgage.....						
7s, Consolidated.....			96%			
St. Louis Division.....			102%			
Union Pacific..... 93%	94%	93%	94	94%		
1st mortgage.....	113%	113%	113%	113%		
Land Grant 7s.....		109				
Sinking Fund 8s.....			118%			
United States Ex..... 63						
Wabash, St. L. & Pac 27%	28%	27%	27%	28%		
Preferred.....	45%	47	45%	45%	46%	
New mort. 7s.....						
Wells-Fargo Ex.....						
Western Pacific b'ds.....						
Western Union Tel. 80%	81%	81	81	81%		
7s., S. F. conv., 1900.....						

## FEDERAL STOCKS:—

U. S. 4s, 1907, reg.....			119%			
U. S. 4s, 1907, coup.....			119%			
U. S. 4 1/2s, 1891, reg.....	112%		112%	112%	112%	
U. S. 4 1/2s, 1891, coup.....	113%	113%		113%		
U. S. 5s, cont'd at 3%.....						
U. S. 3s, reg.....	104		104%	104%		
Dt. of Col. 3-65s, reg.....						
Dt. of Col. 3-65s, coup.....						

## Boston Stock Exchange.

Closing Prices for the Week Ending Feb. 27.

	W.21.	Th.22.	F.23.	Sat.24.	M.26.	Tu.27.
Atch., Top. & San. Fe. 79	79%	79%	79	78%		
1st mortgage.....		120%	120	120%		
Land Grant 7s.....						
Boston & Albany... 175%	175%	175	175%	175%		
Boston and Lowell. 96	96			90		
Boston & Maine.....	156	153		152%		
Boston & Providence.....						
Bos'n, Hart. & Erie 7s.....			116			
Burl. & Mo. R. L. G. 7s.....						
Burl. & Mo. R. in Neb 6s, exempt.....						
48.....						
Chi., Burl. & Quincy 116%	118	117%	117%	118%		
Cin., Sand & Clev (\$50).....						
Concord (\$50).....	101			101%		
Connecticut River.....		163%				
Eastern.....	45%	46	45%	46%	46%	
New 6s, Bond.....		109%				

Fitchburg.....			118			
N. Y. & New England 45%	45%	46	46%	45		
7s.....	115		115	114%	114%	
Northern N. H.....			11			
Norwich & Worcester.....						
Ogden & Lake Cham.....	29	28	28			
Old Colony.....	135%		135		135	
Ph., Wil. & Balt. (\$50).....						
Portl'd, Saco & Ports.....					113	
Pueblo & Ark Val 7s.....						
Pullman Palace Car.....						
Union Pacific.....	93%	94	93%	93%	94%	
6s.....	112%		112%	112%		
Land Grant 7s.....						
Sinking Fund 8s.....						
Vermont & Mass.....						
Worcester & Nashua.....						
Cambridge (Horse).....						
Metropolitan (Horse) 68				69		
Middlesex (Horse).....						
Cal. & Hecla Min'g Co.....	243	243		242		
Quincy.....	50	49%	50	50		

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Feb. 27.

W.21. Th.22. F.23. Sat.24. M.26. Tu.27.

Allegh'y Val. 7 3-10s.....					
7s, Income.....		45			
Buff., N. Y. & Phila. 15½.....	16½	16	15½	16	
Camd'n & Am. 6s, '83.....					
6s, 1889.....					
Mort. 6s, 1889.....		112½	112½	112½	
Camden & Atlantic.....					
Preferred.....					
1st mortgage.....					
2d mortgage.....					
Catawissa.....					
Preferred.....					
2d pref.....		55			
7s, new.....					
Del. & Bound Brook.....					
7s.....					
Elmira & Williamspt.....					124
Preferred.....					
Hunt. & B. Top Mt. ....				14	
Preferred.....					
2d mortgage.....					
Lehigh Navigation. 38½.....	102½	39½	39	39½	
6s, 1884.....	112		102½		
Gold Loan.....					
Railroad Loan.....					
Conv. Gold Loan.....					
Consol. Mort. 7s.....	118½	118½			118
Lehigh Valley.....	64½	65	65	64½	65
1st mort. 6s, coup.....					
1st mort. 6s, reg.....					
2d mort. 7s.....					
Consol mort. 6s.....					
Consol.mtg.6s,reg.....	123				
Little Schuylkill.....	58	58½			59
Minehill&Sch.Hav'n.....					
North Pennsylvania.....		67	67		
1st mortgage 6s.....					
2d mortgage 7s.....					
Gen'l mtg.7s,coup.....					
Gen'l. mtg. 7s, reg.....	125		125½		125
Northern Central.....					
5s.....	100½		100½		
Northern Pacific.....	45½	47½	47½	47½	48½
Preferred.....	80½	82½	82½	82½	83½
Pennsylvania R. R. ....	59	59½	59½	59½	60
1st mortgage.....					
Gen'l mort.....					
Gen'l mort reg.....		125			
Consol. mort. 6s.....					
Consol.mort. reg.....				120	
Pa. State 5s, new.....					
do 4s, new.....					
do 3½s, 1912.....					
Phila. & Reading.....	25½	26½	25½	26	26½
1st mortgage 6s.....					
7s of 1893.....	120				
7s, new convert.....					
Consol. mort. 7s.....				125½	
Consol. mort. reg.....					
Gen'l mort. 6s.....	96½	94½	96½	95½	96½
Def.Income bonds.....					
Philadelphia & Erie.....					
1st mortgage 5s.....		105	105		105
2d mortgage 7s.....	112½	212½		112½	
Pittsb., Cin.&St.L. 7s.....	120½			120½	
Pitts., Tit.&Buff. 7s.....	100½				
Schuylkill Navi't'n.....					
Preferred.....			14		
6s, 1897.....					
6s, 1907.....					
United Co. of N. J. ....	191		191		
Hestonville, (Horse).....	15				
Chestnut&Walnut.....					8



## Baltimore Stock Exchange.

Closing Prices for the Week Ending Feb. 26.

Tu. 20. W. 21. Th. 22. F. 23. Sat. 24. M. 26.

Baltimore & Ohio...	200	105 1/4	105 1/4	105 1/4	105 1/4
68, 1885.....					
Central Ohio (\$50)...	51	50 1/2	50 1/2	50 1/2	50 1/2
1st mortgage.....	111				
Marietta & Cincin'ti.					
1st mortgage, 78...	132 1/2	132 1/2	132 1/2	132 1/2	132 1/2
2d mortgage, 78...	103 1/4	103 1/4	103 1/4	103 1/4	103 1/4
3d mortgage, 88...	54	54	54	54	53 1/2
Northern Cen. (\$50)...	55	55	55	55	55
2d mort. 68, 1885...	115	115	115	115	115
3d mort. 68, 1900...					
68, 1900, gold.....	114 1/4	115	115	115	115
68, 1904, gold.....					
Pitts. & Connells. 78.	122				
Virginia 68 Consol...					
Consol. coupons...					
10-40 bonds.....	40 1/4	40 1/4	40 1/4	40 1/4	40 1/4
Def'd Certificates...					
New 38.....					
City Passenger R. R.					
Western Maryland...					
1st M., end. by Balt					
2d M., do.					
3d M., do.					
1st M., unendorsed					
2d M., end. Wash Co					110 1/4
2d M., preferred...					

## London Stock Exchange.

Closing Prices

Feb. 10. Feb. 2.

Baltimore and Ohio 58, 1927.....	108	110	108	110
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	113	115	112	114
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs.....	83	84	85 1/4	86 1/2
Do. 1st mort. 68, 1895-98.....	116	118	116	118
Det., G'd Haven & Mil. Equip bds.....	118	120	118	120
Do. Con. M. sp. c., till '83 after 6p. c. 117		119	117	119
Illinois Central \$100 shares.....	149 1/2	150 1/2	150	151
Do. S. F. 58, 1903.....	105	107	105	107
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 68 95	97	97	95	97
Do. capital stock \$100 shares.....	57	58	59	60
N. Y. Cen. & Hud. R. mort. bonds.....	130	135	130	135
Do. \$100 shares.....	130	131	129 1/2	130 1/2
Do. mort. bonds (stg.).....	119	121	119	121
N. Y. Lake Erie & West. \$100 shs.....	38 1/2	39	39 1/4	40 1/4
Do. 6 p. c. pref. \$100 shares.....	32	34	34	36
Do. 1st Con. Mort. bonds (Erie).....	130	135	130	135
Do. Do. Funded Coupon bonds.....	125	130	125	130
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. Do. Funded Coupon bonds.....	97	99	97	99
N. Y., Pa. & Ohio 1st mort. bonds.....	56 1/2	57 1/2	56	57
Do. Prior Lien bonds (sterling).....	103	106	103	106
Pennsylvania \$50 shares.....	61 1/2	62 1/2	62 1/4	62 3/4
General Mortgage.....	122	124	121	123
Phil. & Erie Gen. mort. 68, 1920.....	115	117	114	116
Philadelphia & Reading \$50 shs.....	27 1/4	28	28 1/2	29
General Consol Mortgage.....	115	117	115	117
Do. Improvement Mortgage.....	105	107	104	106
Do. Gen. Mtg. '74, ex-def'd coup.....	95	97	95	97
St. L. Bridge 1st mort. gold bond.....	122	124	122	124
Do. 1st. pref. stock.....	92	96	92	96
S. P'fic of Cal., 1st mort 68, 1905-6.....	107 1/2	108 1/2	107 1/2	108 1/2
Union Pacific 1st mtg. 68, 1896-9.....	116	118	116	118
Wabash, St. L. & P. \$100 shares.....	31	33	33	35
Do. \$100 pref. shares.....	53	54	54 1/4	55 1/4
Do. gen. mort. bonds.....	80	82	81	83

## QUOTATIONS.

THE following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—American Dock and Imp. 58, 86 1/4; Atlantic and Pacific 1st, 93 1/4; Boston and New York Air Line, pref., 80; Cleveland and Toledo 78, new, 109; Chicago, St. Louis and New Orleans 58, 103 1/4; Cedar Falls and Minnesota, 12; Chicago St. Paul, Minneapolis and Omaha, 48 1/4; do. pref., 108; do. consol., 106 1/4; Columbus and Greenville pref., 32 1/4; Chicago, Burlington and Quincy; Denver div. 48, 83; do. Iowa div. 48, 87 1/4; Chesapeake and Ohio 1st, series A, 107; do. currency 68, 52; Chicago, Milwaukee and St. Paul, Chicago and Pacific div. 1st, 109 1/4; do. Western div. 1st, 92; do. Wis. and Minn. div. 1st, 91 1/4; do. Southern Minn. div. 1st, 105 1/4; Chicago and Northwestern S. F. 58, 101; do. Ext. bonds, 104 1/4; do. Int. bonds, 103 1/4; Columbus, Chicago and Indiana Central reorganization certif., 62; Columbus, Hocking Valley and Toledo 1st, 85; Denver and Rio Grande, 44; do. 1st, 108 1/4; do. consol., 87; Delaware and Hudson, Penn. div. 1st, 126 1/4; Denver, South Park and Pacific 1st, 96; East Tenn., Va. and Ga., 8 1/2; do. pref., 15 1/4; do. inc., 34; do. 58, 74; Elizabethtown, Lexington and Big Sandy 68, 95; Green Bay, Winona and St. Paul, 5; do. 1st, 77; Gulf, Colorado and Santa Fe 1st, 111 1/4; Hannibal and St.

Joseph consol. 68, 107 1/4; Houston and Texas Central 1st, Waco and N. W. div., 111; do. Hudson River 2d, S. F., 106 1/4; International and Gt. Northern 1st, 106; do. coup. 68, 84; Indiana, Bloomington and Western, 29 1/4; do. 1st, 85; do. 1st pref., 117; Illinois Leased line, 80; Kansas Pacific 1st consol., 99; do. 68, 1896, 108 1/4; do. 68, Denver div. ass., 107 1/4; Lehigh and Wilkesbarre inc., 80; Lafayette, Bloomington and Muncie 1st, 98 1/4; Lake Shore div. bonds, 122; Lake Erie and Western, 26 1/4; do. 1st, 99; Long Island, 61 1/4; do. consol. 58, 98; Louisville, New Albany and Chicago 1st, 102 1/4; Louisville and Nashville, Nashville and Decatur 1st, 115; Manhattan Beach, 17; Metropolitan 2d, 83; Memphis and Charleston, 39 1/4; Milwaukee, Lake Shore and Western pref., 42 1/4; do. 1st, 98 1/4; Minneapolis and St. Louis, 26 1/4; do. pref., 57; do. 1st, 119; do. Iowa Ext. 1st, 112; Missouri, Kansas and Texas, 25 1/4; do. gen'l mort. 68, 78; do. consol. 78, 104 1/4; do. 2d, 54; Missouri Pacific, 99 1/4; Northern Pacific 1st, 103 1/4; New Orleans Pacific 1st, 87 1/4; New York, West Shore and Buffalo 1st, 75 1/4; Nashville, Chattanooga and St. Louis, 58; do. 1st, 115; New York, Ontario and Western, 25 1/4; Norfolk and Western pref., 39; New York, Chicago and St. Louis, 11; do. pref., 26; do. 1st, 96 1/4; New York, Penn. and Ohio inc., 52; Ohio Central, 10 1/4; do. 1st, 88 1/4; Oregon Transcontinental, 82 1/4; do. 1st, 93; Oregon Railway and Nav., 135; do. 1st, 107; Oregon Short Line 68, 93 1/4; Ohio Southern 1st, 80 1/4; Peoria, Decatur and Evansville, 20 1/4; do. Evansville div. 1st, 102; Pennsylvania Co. 4 1/2 8, 95 1/4; Pullman debent., 105; Richmond and Allegheny 1st, 77 1/4; Richmond and Danville, 52; do. 1st, 93; do. deb., 59 1/4; Richmond, Danville and West Point, 22 1/4; Rochester and Pittsburgh, 19 1/4; do. 1st, 104 1/4; Rome, Watertown and Ogdensburg 58, ext., 71; do. inc., 40 1/4; South Carolina 1st, 102 1/4; do. 2d, 92; St. Louis, Alton and Terre Haute div. bonds, 70; St. Paul and Duluth, 35; do. pref., 94 1/4; St. Paul, Minn. and Man. 142 1/4; do. 1st, 113; do. 2d, 109; do. Dakota ext. 1st, 108 1/4; South Pacific of Cal. 1st, 104 1/4; St. Louis and San Francisco gen'l mort., 99 1/4; do. 2d, Class B, 93 1/4; do. C, 94; St. Paul and Sioux City 1st, 111; St. Louis, Kansas City and Northern, Omaha div. 1st, 109 1/4; do. R. E. 78, 108; St. Louis, Iron Mt. and Southern, Cairo and Fulton 1st, 107 1/4; do. 58, 75; Texas Central 1st, 106; Toledo and Wabash Equip. bonds, 80; Texas and Pacific, 38 1/4; do. inc. L. G., 56; Rio Grande div. 1st, 80; Union Pacific col. trust, 103; Wabash, St. Louis and Pacific gen'l mort. 68, 75; do. Cairo div. 1st, 79 1/4; do. Chicago div. 1st, 78; Arkansas 78, Central R. R. issue, 19 1/4; Alabama, Class B, 100; Louisiana consol., 72 1/4; do. consol. 58, 98; Missouri 68, H. & St. J. issue 1887, 109; do. 1888, 110; Ohio 68, 1886, 108 1/4; Tennessee 68, old, 41; do. comp., 43; American Cable, 64 1/4; Mutual Union Tel., 19; do. 68, 82; Colorado Coal and Iron, 31 1/4; do. 68, 79; Cameron Coal, 14; Homestake Mining, 16 1/4; Ontario, 20; Standard, 5 1/4.

**Boston.**—Atlantic and Pacific 68, 92 1/4; Atchison R. R. 4 1/2 8, 80 1/4; Burlington and Missouri River in Neb. 68, non-exempt, 104; Boston, Clinton, Fitchburg and New Bedford, 55; do. pref., 132 1/4; Chicago, Burlington and Quincy, Denver Ext. 48, 82 1/4; Cincinnati, Sandusky and Cleveland 78, 103; Connotton Valley, 3; Connecticut and Passumpsic Rivers R. R., 90; Detroit, Lansing and Northern, 78 1/4; do. pref., 113; Flint and Pere Marquette, 25; do. pref., 97 1/4; Iowa Falls and Sioux City, 86; Kansas City, Lawrence and Southern 58, 104 1/4; Kansas City, Ft. Scott and Gulf 78, 112; Kansas City, St. Joseph and Council Bluffs 78, 112; Little Rock and Ft. Smith, 33; Massachusetts Central 3; do. 68, 20 1/4; Mexican Central, 22 1/4; do. 78, 72 1/4; do. Block No. 3, 95; do. inc., 22; Marquette, Houghton and Ontonagon, 57; do. pref., 112; New York and New England 68, 106; Portsmouth, Gt. Falls and Conway, 32; Rutland pref., 17; Republican Valley 68, 103; Sonora 78, 103 1/4; Summit Branch, 7 1/4; Toledo, Cincinnati and St. Louis, 4; do. 68, 40; do. Dayton div. 1st, 41; do. Branch inc., 10 1/4; Wisconsin Central, 19; do. pref., 27; do. 78, 2d series, 49; Allouez Mining Co., 2 1/4; Brunswick Antimony, 15; Franklin, 13; Osceola, 31; Pewabic, 9.

**Philadelphia.**—American Steamship Co. 68, 107 1/4; Belvidere Delaware 1st, 121; Buffalo, New York and Philadelphia, 25 1/4; Central Transp., 34; Junction 2d, 112 1/4; Northern Central 58, series B, 95 1/4; Norfolk and Western pref., 40 1/4; do. gen'l mort. 68, 101; Nesquehoning Valley, 53 1/4; Pennsylvania Car Trust 58, 100 1/4; Pennsylvania R.R. consol. 58, reg., 108; People's Passenger R.R., 9; Philadelphia City 68, 1895, 128; do. 68, 1899, 132; do. 68, 1905, 133 1/4; Philadelphia and Reading adj. scrip, 87;

do. consol. 58, 1st series, 84; do. 2d series, 66; do. scrip, 108 1/4; do. gen'l mort. 78, 101 1/4; do. debent. 68, 74; Philadelphia and Reading Coal and Iron debent. 78, 75; Philadelphia, Wilmington and Baltimore 48, 93 1/4; Susquehanna Coal 68, 108 1/4; St. Paul and Duluth pref., 90; Susquehanna Canal 68, 70 1/4; Second and Third Streets Passenger R. R., 118; Steubenville and Indiana 68, J. & J., 101 1/4; Texas and Pacific, Rio Grande div. 68, 80; Warren and Franklin 78, 111; Western Pennsylvania 68, Pittsburgh Branch, 106; West Jersey and Atlantic 1st, 110 1/4.

**Baltimore.**—Atlanta and Charlotte, 62 1/4; do. 1st, 106 1/4; do. inc., 77 1/4; Atlantic Coal, 0.90; Baltimore City 68, 1900, 124; do. 68, 1890, 113 1/4; do. 68, 1886, 106 1/4; do. 58, 1894, 113 1/4; do. 58, 1916, 122 1/4; do. 48, 1925, 111; Baltimore and Ohio 1st pref., 130; Charlotte, Columbia and Augusta, 2d, 102 1/4; Columbia and Greenville 2d, 76; Canton Co. 68, 109; Cincinnati 68, gold, 120; Carolina Central 1st, 100; Maryland Defense 68, 102 1/4; Northern Central 58, series A, 100; do. B, 95 1/4; North Carolina 48, 79 1/4; Norfolk and Western pref., 40; Ohio and Mississippi, Springfield div. 1st, 118; Virginia consol. coupons, old, 58; Virginia 10-40 coupons, 48 1/4; do. old, 58; Virginia Peellers coupons, 39; Virginia Midland 2d mort., 110; do. 5th mort., 97 1/4; Western Maryland, 14 1/4; do. 2d pref., 110 1/4.

## Exchanging Berths.

AN affable, though somewhat dessicated American was on his way the other day to the city of Boston. He had, with that thrifty forethought of his nation, secured a lower berth, and was meditating upon the wisdom of gathering his body behind the curtains when he was accosted by an Englishman in a tweed suit. The Englishman was of an ample presence and had the air of one who had been pastured on mutton chops all his life.

"You will excuse me," said he of the tweed suit, "but am I right in supposing that you have the lower berth?"

"You bet your life," replied the other.

"My sister," said the owner of the tweed suit, "has the upper berth, which is deuced awkward, you know. The fact is, added the Englishman, with frank urbanity, 'it's unpleasant for ladies to climb up past a man in a lower berth. Now, might I ask you, sir, to do me the extreme favor of occupying the upper berth and permitting my sister to take your's?'"

The request was scarcely preferred when the American, with the gallantry of a genuine Yank, hastened to assure his English acquaintance that nothing could give him more pleasure than to be of service to a lady.

On the following morning the American was astonished to see a pair of tweed legs emerge from a lower berth opposite that which he had politely given up, and the next moment the adipose upper extremities of the Englishman.

"Say," said the American, as an air of grave disgust began to creep over his astonished physiognomy, "didn't you ask me to give up my lower berth to your sister?"

"Certainly, my dear fellow," replied the gentleman addressed, "hope you slept well?"

"And you had a lower berth?"

"Of course."

"And then you got me to give up mine to your sister, sir?"

"Why, my dear fellow," said the Englishman, in his turn, "you didn't expect I'd give up a lower berth to my own sister, did you."

"We only part to meet again"—the nibs of the Extra fine Elastic pens and other styles of Esterbrook's make.

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## COMMERCIAL DEPARTMENT.

### A NATIONAL WANT.

THERE is little probability of an extra ses-  
sion of our national legislature, and the  
newly elected members of the Forty-eighth  
Congress will have ample leisure to consider  
the wants and necessities of their constituents  
before they meet in December. The dereliction  
of the outgoing Congress in all matters apper-  
taining to the welfare of the nation, and their  
overwhelming rebuke at the polls in November  
last, teaches a wholesome lesson. The public  
are disgusted with petty jobbery and selfish  
ambition on the part of their representatives,  
and demand that some portion at least of the  
latter's time be devoted to questions of nation-  
al polity, and not to party or individual ends.  
The shameful neglect of the present Congress  
in enacting satisfactory Bankruptcy laws should  
inspire ardor in the succeeding body, and there  
is no reason why the year 1883 should pass  
without action in this matter. It is now five  
years since the Bankrupt Act of 1867 was re-  
pealed, and for two years the question of a new  
law has been before Congress at odd times, and  
subjected to desultory discussion.

At present, creditors of insolvent parties are  
forced to have recourse to the various State  
Bankruptcy laws, and the mercantile and com-  
mercial world is met at every point with em-  
barrassments and vexatious delays. The need  
of a national law that will establish a uniform  
system of Bankruptcy throughout the whole  
country is universally admitted, yet Congress  
appears to be wholly powerless to deal ade-  
quately with the question. The Senate ap-  
pointed a committee to form and report a suit-  
able Bankrupt law, and in place of devising  
one themselves they proceeded in the absurd  
fashion lately followed by the Tariff Commis-  
sion, listening to arguments and suggestions  
from everyone who approached them, which  
as might be expected covered an immense  
amount of useless ground and differed widely  
in purport and substance. Judge LOWELL, of  
Massachusetts, a distinguished jurist and a  
member of the United States judiciary, sub-  
mitted a system of Bankruptcy laws, founded  
upon his great and varied experience in Bank-  
ruptcy litigation, but Congress is unable to  
make up its mind whether to adopt it or frame  
one with the general assistance of the public  
that in all probability would be much inferior.  
It is time that members of Congress appreci-  
ated the fact that they are law-makers, and acted  
assuch. Let them pass such laws as their wisdom  
and integrity may dictate as fitting and bene-  
ficial, and not solicit the assistance of the peo-

ple and thereby confessing their inability to per-  
form properly the duties for which they were  
chosen. A Bankrupt Act or any national meas-  
ure that has been tinkered at by everyone and  
formed of a patch-work of suggestions is liable  
to be a sorry specimen of legislation.

Unfortunately the Bankrupt Act of 1867 and  
all insolvency laws hitherto established by Con-  
gress have been passed in periods of great com-  
mercial depression, and were induced by the  
pressing demands of the moment. As a result  
these acts took the form of special legislation,  
and when the conditions prompting their  
passage ceased to exist, they were no longer satis-  
factory. What is wanted are Bankruptcy laws  
that shall be adapted to all times, all places,  
and all persons; a system of procedure whose  
usefulness cannot be affected by national pros-  
perity or depression, and whose provisions may  
apply with equal satisfaction in the North, East,  
South and West. The passage of such laws  
will fall as an inheritance to the members of  
the Forty-eighth Congress from their incompe-  
tent predecessors, and it yet remains to see  
what use is made of this heritage. It is our  
intention to enter fully upon the questions of  
a national Bankrupt Act, and to discuss the  
matter thoroughly in subsequent issues.

### Bogus Foreign Wines.

AMIDST the discussion relative to the sale of  
California wines under spurious labels, some  
of which are direct infringements upon the  
trade marks of prominent French firms, one  
important factor in our trade in imported  
wines has been overlooked. It is of course  
quite natural and right that native producers  
should wish to introduce into the market a  
domestic wine which shall stand upon its own  
merits and not be sold at four or five times its  
real value as French. Statistics show that two-  
thirds to three-fourths of the presumed im-  
ported clarets are indubitably American,  
though reputable dealers do not hesitate to  
palm off these spurious wines upon many of  
their inexperienced customers, reserving the  
genuine article for connoisseurs who would  
immediately detect the fraud.

Anyone who has visited the various Italian  
seaports, particularly those in Sicily, has been  
surprised at seeing the quantities of casks  
marked "vino," addressed to business houses in  
Marseilles, Bordeaux and other French cities,  
lying upon the quays preparatory to shipment.  
This wine, harsh, thin, and altogether of an  
inferior quality, is sold at the vineyards at from  
four to seven cents the quart in quantities, and  
this gives the peasant a fair profit.

It would be almost impossible to dispose of  
any great amount of this astringent liquid in  
French markets in its normal condition and  
under its own name. It is consequently mixed  
with other wines and doctored to such an ex-  
tent that it is confidently stated by experts that  
two-thirds of the wine sold by different firms  
as coming from their own vineyards is simply



a cheap, adulterated Italian wine. Under these conditions, with two-thirds of the imported nominally French wines being Italian, and two-thirds to three-quarters of those in this country carrying spurious labels, what chance does the ordinary consumer stand of having his palate gratified by a glass of good wholesome claret.

### Production of American Pig Iron.

STATISTICAL reports having been made by the owners of all the blast furnaces in the United States to the American Iron and Steel Association, of Philadelphia, the *Bulletin* of that Association is enabled to announce that in the year 1882 there were produced by the said furnaces 5,188,122 net tons, or 4,623,323 gross tons, of pig iron. In 1881 the production was 4,641,564 net tons, or 4,144,254 gross tons. The increase in 1882 over 1881 was 536,558 net tons, or 479,069 gross tons, which is over 11 per cent. The following table gives the production of anthracite, charcoal and bituminous pig iron in 1882 compared with 1881:

KINDS OF FUEL.	Tons of 2,000 pounds.	
	1882.	1881.
Bituminous .....	2,438,078	2,268,264
Anthracite .....	2,042,138	1,734,462
Charcoal .....	697,906	638,838
Total .....	5,178,122	4,641,564

The production of 1882 exceeded that of any previous year in every respect. More bituminous pig iron, more anthracite pig iron or more charcoal pig iron was made than was ever produced in any one year before. The stock of unsold pig iron in makers' hands at the close of 1882 was over twice as large as that at the close of 1881. The stock at both periods is shown in the following table:

KINDS OF FUEL.	Tons of 2,000 pounds.	
	1882.	1881.
Bituminous .....	157,196	36,495
Anthracite .....	107,259	90,351
Charcoal .....	165,239	84,050
Total .....	429,694	210,896

The stock of both bituminous and anthracite pig iron on hand at the close of 1882 is thus seen to have been light, but that of charcoal pig-iron was very heavy, amounting to almost one-fourth of the production for the year of that kind of iron. As our imports of foreign pig iron in 1882 amounted to about 540,000 gross tons, and the producers of pig iron had 138,300 gross tons on hand unsold at the beginning of 1882, as compared with 383,655 tons at the close of the year, our probable consumption of pig iron in 1882 was about 4,967,968 tons, against a probable consumption of 4,982,565 tons in 1881.

The condition of the furnaces of the United States on January 1 of the present year is shown in the following table, as compared with their condition one year previous:

DATE.	Completed Furnaces.	In blast.	Out of blast.
January 1, 1883 .....	687	417	270
January 1, 1882 .....	701	446	255

### Growth of Michigan.

THE Commissioner of Emigration of the State of Michigan, in reporting upon the probable growth of the State in 1882, says: "A careful estimate, based on much personal intercourse, wide correspondence, and newspaper reports,

justifies the belief that the accessions to the population of the northern portion of Michigan during the year 1882 ranged from 50,000 to 75,000. All parts of the State, however, have shared in the general prosperity, and have added to their inhabitants, and there can be little doubt that a census taken now would show a population of nearly or quite 1,900,000." These conclusions are sustained by the fact that the sales of lands by the State, the United States, and the principal land grant companies during 1882 were unusually large. Some calculations based on the last census will be interesting. According to the revised footings of the Census Bureau the population of Michigan in 1880 was 1,636,937. Its growth in the number of inhabitants and in rank as a peopled State and the rate of its growth are shown in the following table compiled from the successive United States and State censuses:

Census Year.	Population.	Rank in Population.	Increase Over Previous Census.	Rate of Increase Per Year in Each Interval.
1810.....	4,762	24	.....	.....
1820.....	8,765	26	4,003	400
1830.....	31,639	26	22,874	2,287
1840.....	87,273	..	55,634	13,908
1850.....	174,407	..	87,134	29,065
1860.....	212,207	23	37,800	12,600
1870.....	296,489	..	84,282	16,844
1880.....	397,654	20	101,165	20,233
1854.....	507,521	..	109,867	27,467
1860.....	749,113	16	241,592	40,265
1864.....	803,601	..	54,548	13,637
1870.....	1,184,059	13	380,398	63,400
1874.....	1,334,031	..	149,972	37,493
1880.....	1,636,937	9	302,906	50,484

In the period which elapsed between the census of 1840 (the first after its admission to the Union) and that of 1880, Michigan rose from the twenty-third to the ninth place in population. In this progress it passed the 14 States of Maine, New Hampshire, Vermont, Connecticut, New Jersey, Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, and Tennessee. It was passed temporarily (census of 1860) by Wisconsin and (census of 1870) by Iowa—in each case by narrow margins—but the census of 1880 showed that it had outstripped both these rivals, and that no State now exceeded it in population which did not in 1840 surpass it in the number of inhabitants by more than 80 per cent. Of the 11 principal States of the Union, Michigan, according to the last census, led all but Texas in the percentage of its current growth in population. If the rate of growth which prevailed between 1870 and 1880 should continue during the present decennial period the relative position of these States in 1890 would be about as follows:

States.	Percentage of Growth in 1870-80.	Estimated Population in 1890.
1. New York.....	.18	6,000,000
2. Pennsylvania.....	.22	5,000,000
3. Ohio.....	.20	4,000,000
4. Illinois.....	.21	3,950,000
5. Texas.....	.94	3,000,000
6. Missouri.....	.26	2,650,000
7. Indiana.....	.18	2,350,000
8. Michigan.....	.38	2,250,000
9. Iowa.....	.36	2,200,000
10. Massachusetts.....	.22	2,175,000
11. Kentucky.....	.25	2,050,000

These figures show Michigan as having passed during this decade both Massachusetts and Kentucky, and having been passed by Texas, thus rising from the ninth to the eighth place. There is no doubt that the census of 1890 will show more people in Michigan than either Massachusetts or Kentucky, but it is not probable

that Texas will make the enormous stride given in the foregoing calculation, while it is probable that Indiana will fail to maintain its relative rate of growth and that this State will increase its rate. It is thus almost certain that in the next general census Michigan will be the seventh State in population, while it is among the possibilities that it may be the sixth.

### New York Markets.

Quotations of Wednesday February 28.

FLOUR firm, but quiet; superfine, \$3.70@4; No. 2, \$2.75@3.65. Corn meal quiet and steady.

COTTON—Spots dull; sales 526 bales; middling uplands, 10 3-16; do Gulfs, 10 7-16c. Futures variable, closing firmer, at 10.19c for March, 10.20c for April, 10.42c for May, 10.56c for June, 10.69c for July, 10.81c for August, 10.52c for September, 10.21c for October, and 10.12c for November; sales 73,500 bales; receipts at the ports, 20,055 bales.

PROVISIONS—Pork was more active on the spot; 500 bbls mess were sold on private terms; quoted \$19.25@19.75; 800 bbls extra prime, \$15.50; for future delivery, sales 250 bbls May, \$19.50. Bacon firm, with 150 boxes long and short clear at the West at 10.05c; quoted here, 10 1/2c; long clear, 10 1/4c. Beef and beef hams quiet. Cut meats steady; sales 1,000 smoked shoulders, 9c; 4,000 lbs pickled bellies, 10 lbs., 10c; 5,000 do. 12 lbs, 9 1/2c; 10,000 lbs heavy do, 9 1/2@8 1/2c. Lard opened better, became irregular, but soon recovered, and closed steady, sales on the spot, 110 tcs prime city, 11.20@11.25c; do Western, 11.65@11.70c; for future delivery, sales 17,000 tcs, including April, 11.79@11.80c; May, 11.87@11.91c; June, 11.93c. closing weak; March, 11.65c; April, 11.76c; May, 11.87c; June, 11.90c; July, 11.93. August, 11.95@11.97c. Eggs quiet; Jersey, 26c; State Pennsylvania, and Maryland, 24 1/2@25c; Western, 24@24 1/2c; Southern, 24@24 1/2c; ice house, 12@18c; limed, 18@21c.

GRAIN—Wheat slightly higher early, but afterward weaker, with less activity; spot sales, 190,000 bush at \$1.03@1.29 1/2 for red, including No. 1 at \$1.28 1/2@1.29 1/2; No. 2 at \$1.24 1/2@1.24 1/2, delivered, and No. 3 at \$1.20, and \$1.10 @1.28 for white, including No. 2 at \$1.06 1/2, from store, and State at \$1.28; of options, sales 2,876,000 bus. No. 2 red at \$1.22 1/2@1.23 for February, \$1.22 1/2@1.23 for March, \$1.24 1/2 @1.25 1/2 for April, \$1.25 1/2@1.26 1/2 for May, and \$1.26 1/2@1.27 for June, and 8 loads No. 1 white at \$1.15@1.15 1/2 for March. Rye and and barley quiet. Oats higher; sales 1,280,000 bush at 51 1/2@52 1/2 for mixed, and 52@55c for white; of which No. 2 at 51 1/2@52c for mixed and 54c for white; also No. 2 mixed at 51 1/2@51 1/2 for March, 5c@52 1/2c for April, 51 1/2@52 1/2c for May, 51 1/2@52 1/2c for June. Corn higher; sales 200,000 bush at 72@73 1/2c for new No. 2 mixed, 64 1/2@65 1/2c for No. 3 do., 70 1/2@71c for steamer mixed, and 60@73c for ungraded do., 73@74c for white Southern, and 69c for yellow dock on dock; of options, sales 3,048,000 bush. No. 2 mixed at 71 1/2@72 1/2c for February, 71 1/2@72 1/2c for March, 72 1/2@72 1/2c for April, 71 1/2@72 1/2c for May, and 71 1/2@72 1/2c for June. After Change wheat closed steady; No. 2 red winter, cash, \$1.24 1/2 delivered; March, \$1.22 1/2; April, \$1.24 1/2; May, \$1.26; June, \$1.26 1/2. Corn firm; No. 2 mixed, cash, 72 1/2c, in elevator; March, 71 1/2c; April, 72 1/2c; May, 71 1/2c; June, 71 1/2c. Oats firm; March, 51 1/2c; April, 52 1/2c; May, 52 1/2c; June, 52c.

### Chicago Grain Markets.

Quotations of Wednesday, February 28.

	9:30 A.M.—Opening.—		1 P.M.—Closing.—	
	Mar.	May.	Mar.	May.
Wheat...	1.07 1/2	1.13 1/2	1.07 1/2	1.13 1/2
Corn...	56 1/2	61 1/2	57	61 1/2
Oats...	40 1/2	42 1/2	41 1/2	43
Pork...	18.55	18.55	18.65	18.65
Lard...	11.72 1/2	11.72 1/2	11.75	11.75
S. Ribs...	10.05	10.05	10.15	10.15

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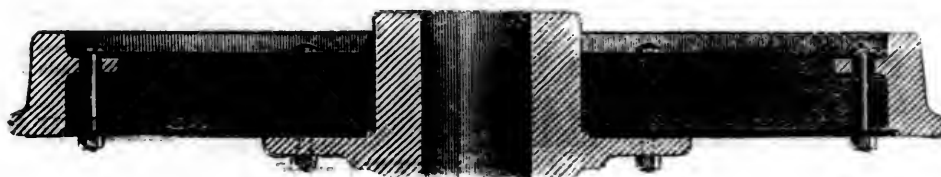
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## MISCELLANEOUS.

## A Fight With Cold.

ANGUS SINCLAIR, IN "AMERICAN MACHINIST."

ENGINEER TOM MYERS, of the Frigid Northern railroad, tells with graphic detail the story of how he was pulled through a remarkable snow siege during the terrible winter of '80. That was Tom's first winter on the right-hand side. One day when he happened to be out on the most northerly division, one of the numerous snow hurricanes of the season overtook him, and its rigor plainly indicated a block. Presently passenger train No. 62 came along, and Tom got orders to leave his own train and double-head 62, and try to force it through. The engineer of 62 was Uncle John, the oldest engineer on the road, a man ripe to the experience they were likely to go through, and a good counselor for a young runner. They coupled on and started out, Tom resolved to be governed by the advice of Uncle John, should he need it. The wind kept driving clouds of snow into every sheltered nook, so that their prospects of going far were slender; but the order to push ahead was imperative, and a hearty trial was needed to show how far they could go. Tom's engine had a low ash-pan, the bottom of which reached below the line of the pilot, and it kept raking the snow in front of the back drivers, causing persistent slipping. It was also getting badly frozen from water running from a leaky mud ring. At Uncle John's suggestion they stopped at a point clear of snow and took down the ash-pan. This gave considerable relief, and they pushed ahead with renewed activity. At a station they were notified that a certain cut in front was badly drifted, but the trackmen were under the impression that the train could go through by making a dash for it. Both engineers accordingly prepared to do their best, and with six coaches behind them they plunged into what proved to be a snow mountain, at the rate of fifty miles an hour. A great cloud mass of snow rising from the pilot envelops the engines in complete darkness, a thundering of snow clods on the cap, a tumult of rattling and slipping of wheels, a hissing and rush of hot steam, a feeling as if one had jumped from the top of a steeple into a stack of wool, and all is over. That is about the sensation of butting into deep snow. When they came to inspect the situation, it was found that the first engine had gone into the snow-bank almost to the top of the stack, and the avalanche had knocked off the head-light and broken in the front cab windows. The whole train was stuck fast, wedged solidly into the compactly driven snow. So soon as the impossibility of backing out became apparent, means were at once taken to make the best of the situation. Uncle John, who took the lead, set men to work shoveling snow into the tanks, which was melted by the heaters. Where melting of snow has to be resorted to for keeping a water supply, care should be taken to prevent the quantity in the tank from running low. When the tank is nearly empty, a few minutes shoveling will chill the water below the melting point.

With the water supply assured, our train men experienced no difficulty in weathering the night which was fast approaching. The heaters were kept going just enough to keep the pipes open, and a careful watch was maintained to see that they did not stop working. There is far less labor in keeping pipes open by vigilant attention than there is in thawing them out when they become a mass of ice. While an engine remains passive in the snow, all the steam needed is what will keep the water and pipes from freezing. When morning came there was no improvement in the position of the snow-bound train. No change in the weather. To move was impossible, and no aid could be got from shoveling, for the snow blew in as fast as it could be thrown out. All they could do was to wait for better weather. But waiting meant using up coal, and the supply of that article was limited. Calculation assured them that both engines could not be kept alive longer than another night, so they resolved to let one of them die, so that its coal could be used for keeping the other warm. The head engine was of the most importance, since it could pull out for supplies so soon as the track could be cleared, so the train engine was cooled down. With much labor and untold suffering, they burrowed in the snow and took down the main rods, screwed out the cylinder cocks, removed the frost plugs from the pumps, disconnected the water-boxes and blew the live steam through the pumps, valves and pipes. They then run the water out of the boiler and tank. These precautions finished, the engine was as safe from frost as if she was housed in a comfortable round-house. This honest work performed did not end the labor of the engine-men. They had just finished the moving of the coal to the live engine when its injector refused to work. Every effort was made to start it without success; then it was taken apart and the primertube found broken. The pump was now the only resort. They disconnected the forward ends of the side rods, jacked the weight off the drivers, poured some oil on the rails and slipped the wheels till they got a little water. Then they hollowed a channel in a square block to fit the arc of the driving axle, placed it under the middle of the axle on top of a screw-jack, and raised up till most of the weight of the wheels was off the rails. With this rig the engine could be pumped as easily as if she had been securely raised on blocks.

The exemplary persistency of these engine-men was finally rewarded with success. They held the engine alive till shovelers came and dug them out. Then they went to the nearest station for fuel and returned for the other engine, which was hauled to a water tank and there resuscitated. By this means these two engines were enabled to render material assistance in opening the road for traffic, instead of helping to encumber the blockade, as would have been the case had feeble hands permitted them both to cool off in the snow.

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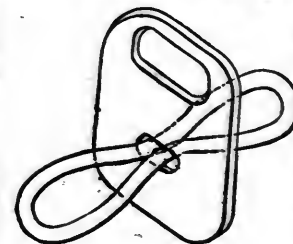
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 Cornwall: Levi Blonch, Lebanon, Pa.  
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 Del., Lackawanna and W. and N. Y., Lack. and W.: Robt. McKenna, Scranton, Pa.  
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 Delaware and Hudson Canal Co.  
 Susq. Div.: J. R. Skinner, Oneonta, N. Y.  
 Sar. and Ch. Divs.: Chr. Korner, Green Island, N. Y.  
 Pa. Div.: T. Orchard, Carbondale, Pa.  
 Denver and New Orleans: S. P. Weller, Denver, Col.  
 Denver and Rio Grande: N. W. Sample, Burnham, Col.  
 Des Moines and Ft. Dodge: E. A. Avery, Grand Junction, Ia.  
 Det., Lansing and No'n: G. C. Watrous, Ionia, Mich.  
 Dunkirk, Allegheny Valley and Pittsburgh: J. C. Hagggett, Dunkirk, N. Y.  
 East Tennessee, Virginia and Georgia:  
 East Tenn. Div.: Jos. Armbruster, Knoxville, Tenn.  
 Alabama Div.: W. W. Pierce, Selma, Ala.  
 Elizabeth City and Norfolk: J. S. Whitworth, Norfolk, Va.  
 Eureka and Palisade: A. S. Longley, Palisade, Nev.  
 Europ. and No. Amer.: A. O. Bailey, Mattawamkeag, Me.  
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 Kentucky Central: J. L. Hackathorn, Covington, Ky.  
 Knox and Lincoln: C. L. Turner, Bath, Me.  
 Lake Shore and Michigan So'n: John Kirby, Cleveland, O.  
 Buffalo Div.: A. C. Robson, Buffalo, N. Y.  
 Erie Div.: J. Withycombe, Cleveland, O.  
 Toledo Div.: W. O. Smith, Norwalk, O.  
 Western Div.: Frank O. Bray, Adrian, Mich.  
 Lehigh Valley: John S. Lentz, Packerton, Pa.  
 Little Rock, Miss. River and Texas: F. Hufsmith, Arkansas City, Ark.  
 Little Rock and Fort Smith: James Malone, Argenta, Ark.  
 Long Island: C. A. Thompson, Long Island City, N. Y.  
 Louisville, New Albany and Chicago: Josiah Bettis, New Albany, Ind.  
 Maine Central: C. H. Kenison, Augusta, Me.  
 Manhattan: H. A. Webster, New York, N. Y.  
 Marquette, Houghton and Ontonagon: H. D. Lyons, Marquette, Mich.  
 Memphis and Little Rock: P. Twitchell, Argenta, Ark.  
 Mexican Central: J. H. O'Brien, City of Mexico.  
 Michigan Central: Robert Miller, Detroit, Mich.  
 Midland of Canada: Edward Douglas, Port Hope, Ont.  
 Victoria Div.: H. H. Harry, Lindsay, Ont.  
 Toronto and Nipissing Div.: Chas. E. Caron, Uxbridge, Ont.  
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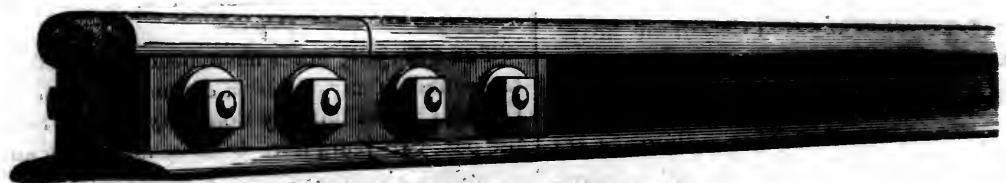
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## STREET RAILWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editor. All communications should be accompanied by the name and address of the writer.]

### STREET CAR TRACTION.

MUCH more has been said than done in regard to devising satisfactory systems of street railway locomotion, and for this reason the railway managers are accused of indifference in the matter, and an unreasonable fondness for horse traction as a motive power. We believe this accusation to be unfounded, and can understand their seeming apathy to be nothing more than an inability on their part to overcome the difficulties in the way of adopting any other system of traction than the primitive means afforded by the employment of horses.

We question if the managers of any street railway would continue the use of horses a single day if a satisfactory traction system were devised that was at once practicable and inexpensive, and whose use would be permitted by the municipal authorities. Certainly they have no reason for clinging to the "horse" car system, which is harassed with countless objections. It necessitates the maintenance of large and expensive stables, the frequent purchase of horses, and the employment of hands to attend to both. The occurrence of epidemics in their live-stock occasions interruption in their trips, expense in nursing the horses afflicted, and severe loss by the death of the latter. Surely if the managers of street railways are men of business views, and anxious to derive as much pecuniary profit as possible from their organizations, they can have little fondness for a system of traction that drains heavily upon their receipts.

The use of steam as a motive power has been tried and found wanting. City authorities are generally averse to permitting the employment of steam as a propelling power on street railways, for its use undeniably causes fright to carriage horses, and renders foot traveling dangerous. Debarred from experimenting in this direction, inventors have turned their attention to other systems, and the establishment of "cable roads" has resulted.

We believe that eventually the development of electricity as a motive power will solve the problem of street railway traction, as it will be the great dynamic agent employed in every instance where steam power is now used, accomplishing results and overcoming obstacles now deemed impossible and insur-

mountable, but until that happy era, which may be in the far distant future, cable traction merits at least the attention of those interested in street railways.

We do not commit ourselves to an entire endorsement of cable traction for street roads, but open our columns for its free discussion, as we will for that of any device, invention or appliance that may have a bearing upon the interests of street railways. With this view we shall frequently publish communications from our readers, and extracts from other publications, on the subject of street railway traction; and the cable system will be treated at length, as the only practicable means of locomotion for street railways hitherto discovered, other than the employment of horses. In this connection we print below a communication from D. J. Miller, M. E., originally published in the *American Engineer*, of February 2, on the subject of cable street railways, and shall follow next week with another article on the same subject. It must be borne in mind that the cable road is not an entirely new device, as is commonly imagined, for the Patent Office of the United States has granted no less than one hundred and twenty-five patents on traction rope railways, the oldest bearing date of December 28, 1840. More than forty years have elapsed from the conception of the device to its adoption in practical use, so we may conclude that sufficient time and energy have been devoted to its improvement and perfection to insure its consideration by street railway companies and their managers.

### Cable Street Railways.

#### A FEW PRACTICAL POINTS CONCERNING THEIR OPERATION.

BY D. J. MILLER, M. E.

THE following notes have been collected in the course of my duties in connection with the Chicago Street Railway Company, who, within the past two years have been constructing and operating a cable system to supersede the horse traction, in which its magnitude and final success have caused it to become a prominent public matter, and of which the methods and main features are now tolerably well known.

#### CONDITIONS OF TRAFFIC AND PLANT—HORSE-POWER REQUIRED TO OPERATE SAME.

	H.-P
At 6 P. M., (when traffic is heaviest).....	215
For machinery and cables, (no cars running).....	138
For driving machinery and engines, (no cables).....	23

It will be seen from the above figures that 77-horse power is required to move cars and passengers, and that it takes 115-horse power to move the cables and carrying and guiding sheaves. At 6 P. M. there are 43 grip cars running, each having one State street passenger car attached, and at this hour of the day there are generally nine Archer avenue cars on the north section of the State street line.

	Lbs.
The grip cars weigh each.....	5,145
Box cars (16 feet), weigh each.....	5,450
Box cars (21 feet), weigh each.....	6,200

About two-thirds of the passenger cars used are of the large size, and by averaging them we would have 43 cars of 5,825 lbs. each,  $43 \times 5,825 = 250,475$  lbs. of State street cars and 43 grip cars of 5,145 lbs. each will give 221,235 lbs. for grips. Most of the cars have from thirty to fifty passengers at 6 P. M., but a few of them at the southern terminus of the road are nearly empty: in order to average them we will allow twenty passengers to a car, and as there are ninety-five cars, there will be  $95 \times 20 = 1,900$  passengers. Allowing 140 lbs. for each passenger we have a total of 266,000 lbs.

Nine cars for Archer avenue (light ones),  $5,450 \times 9 = 49,050$  lbs.

#### RECAPITULATION.

	Lbs.
Archer avenue cars.....	49,050
State street cars.....	250,475
State street grip cars.....	221,235
Total for passengers.....	266,000

Total weight of cars and passengers..... 786,760

As it takes 77-horse power to move 786,760 lbs. at a speed of 6.85 miles per hour, we have one-fifth or two of a horse-power for each ton load. This is but an approximation, as it was a very difficult matter to ascertain the exact number of passengers on the cars at the moment the engines were indicated.

The weight of machinery on State street cable road (aside from that used to transmit power to the cable) is as follows:

	Lbs.
1,500 carrying pulleys of 40 lbs. each.....	60,000
7 single groove 12-foot sheaves of 4,500 lbs. each.....	31,500
1 double groove 12-foot sheave of 8,000 lbs.....	8,000
2 double groove 6-foot sheaves of 21,000 lbs. each.....	42,000
2 single groove 6-foot sheaves of 1,100 lbs. each.....	2,200
44 horizontal wheels on curves of belt line 50 lbs. each.....	2,200

Total for machinery..... 108,100

There are 48,443 feet of cable in operation, weighing  $2\frac{1}{2}$  lbs. per foot, making a total of 121,107½ lbs. of cable, and if to this we add the weight of machinery, or 108,100 lbs., we have a total of 229,207 lbs. or nearly 115 tons; and as it requires 115-horse power to move this at a speed of 6.85 miles per hour, it requires 1-horse power for each ton.

From the foregoing figures it will be seen that while 1-horse power is required for each ton of cable and machinery, but one-fifth of a horse power is required for each ton of cars and passengers. We are willing to admit that the condition of the cable machinery has considerable to do with the enormous amount of power consumed to keep the cable in motion, but it must be remembered that there is considerable power consumed in bending the cables around the several guiding sheaves. When compared with other systems of traction it will be found that the cable system requires the least power to carry a certain number of passengers. By dividing the total horse-power developed by the total number of trains running (215-horse power = 43 trains), we have 5-horse power to a train, including all cables and machinery. The actual power consumed by each train (cable and machinery not included) is 1.78-horse power.

## Taxation of Car Horses.

AN ACTION has been brought in the Philadelphia courts, which affects the right of a city to tax the horses of passenger railway companies, and trial has been ordered at the next term of the Court of Common Pleas No. 1, in that city, of a suit entered by the Chestnut and Walnut Street Line against Casper Berry, a delinquent tax collector. The question has been in the courts for several years. Judge Thayer, in Court No. 4, several years ago decided an equity proceeding in favor of the city. The following year Judge Allison, in Court No. 1, gave a similar decision on the taxes for that year. The case was then brought to the United States Court by a New York stockholder, asking that the company be enjoined from paying the taxes. Here again the legality of tax was affirmed.

With a view to having the matter brought before a jury it was arranged that the tax for 1881, amounting \$1,000, should be left exposed upon a desk in the office of the company, from which it was quietly removed a few weeks ago by Mr. Berry, the collector, without the consent of the railway officials, who were present. A suit was then brought against him to recover the amount taken. This action is founded upon a precedent established by Horace Binney in the early part of the present century in resisting, on behalf of the Bank of the United States, a tax claim of the State of North Carolina.

## Heating Street Cars.

ROCHESTER CITY AND BRIGHTON R. R. Co. }  
ROCHESTER, N. Y., Feb. 16, 1883. }

EDITOR AMERICAN RAILROAD JOURNAL.

DEAR SIR:—In your issue of January 27, I notice your quotation from a letter of Mr. C. B. Clegg, of Dayton, O., in which he expresses himself as decidedly opposed to heating street-cars, principally on account of its unhealthfulness. We were formerly of the same opinion, but were induced to make the trial last winter, in a few of our cars. So well were we satisfied with their operation that we are now using fifty-four heaters daily. With two or three of the ventilating windows open, and the frequent opening of the door as passengers get on or off, the air in the car is as pure as it would be if not heated. The damp chill in an unheated car often deters people from riding.

Heating our cars in cold weather has certainly increased the travel very materially. Except in cities where the climate is very mild, a heater will be found a luxury which will be appreciated by the traveling public—and prove remunerative to the company as well. If my friend Clegg will visit us and ride in one of our comfortably warmed and well ventilated cars on a cold winter day, he will acknowledge that circumstances alter cases. In a cold climate they are a necessity, and the number of street railroads that heat their cars during the severe winters which we have in the northern section of the country is increasing every year.

Yours Respectfully,

C. C. WOODWORTH, Sec'y.

## STREET RAILWAY NOTES.

THE street railway companies of Brooklyn, are combining to fight in the courts the city ordinance against "bobtail" cars, which goes into effect on May 1st.

THE *Pittsburgh Chronicle* says that \$12,500 had been subscribed for the new Wilkesburg and East End street railway. The work of laying the tracks will be commenced in the spring.

THE cable system of street-car traction, which is in successful operation at San Francisco and Chicago, and soon will be in Philadelphia, is about to be introduced into England, at Highgate.

THE Middlesex, Mass., Railroad Company, has voted to lay tracks to Medford square from the Winter Hill terminus, provided Medford will give the right of way and do the paving, the company afterward to keep the road in repair.

THE Selectmen of the town of Peabody, Mass., have granted the petition of the Lynn and Boston horse railroad for leave to lay a track along the Lynn road, Washington and Main streets. The line between Peabody and Lynn will be constructed about June 10.

CARS for the street railway in Monterey, Mexico, have arrived and are being set up for service. The road will go into operation in a few days. It extends from the principal plaza to the railway station in the suburbs, traversing several of the principal streets of the city. The fare will be five cents.

A LEADING street railway official of Philadelphia informs us that it is very difficult to obtain information relating to street railways. His difficulty is probably owing to the fact that the organizations have hitherto lacked a medium of communication which deficiency the AMERICAN RAILROAD JOURNAL hopes to supply.

THE realty of the Cincinnati Consolidated Street Railroad Company is appraised for tax purposes at about \$360,000, and its personal property at about \$150,000, or a total of a little over half a million of dollars. Its capital stock consists of 90,000 shares at a par value of fifty dollars a share, or \$4,500,000, and it has a bonded indebtedness of \$500,000.

In our news department this week will be found the rules and regulations governing the approaching Chicago Railway Exposition, to which we alluded in this department of our last issue. Next week we shall publish the premium list, enabling those interested in street railways, to comprehend the scope of the enterprise, and to ascertain its bearing upon street railway appliances.

THE annual report of the Union Passenger Railway Company of Philadelphia, for the year ending December 31, 1882, shows an expenditure of \$896,727.67, with receipts amounting to \$1,302,133.87, leaving a net profit of \$405,-

406.20. This is an increase of \$11,375.50 on the profits of the preceding year. The daily receipts of each car averaged \$20.62, and the expenses \$14.53. The company has 349 cars in use on its roads.

WE publish this week another communication on the subject of street-car heating. There is no reason why the consideration of this question should be postponed until the approach of winter, when railway companies are compelled to either adopt the first heating system that is brought to their notice, or let their passengers shiver with cold. There is no better time to discuss the subject than in the summer months, when ample opportunity may be taken for investigation.

THE tracks of the Union Passenger Railway, of Baltimore, are being extended along Pratt street to connect with those of the Catonsville Railway on Frederick avenue, preparatory to putting into effect the consolidation of the two roads, recently brought about by the purchase of a controlling interest in the Catonsville road by the management of the Union line. The gauge of the Catonsville road is one inch narrower than that of the Union, and this fact, which was not known to the Union people before the purchase, is giving them considerable trouble in getting the two rails in proper running order.

COPIES of our issue of February 17th were sent to the officers of every street railway company in the country, accompanied by postal cards which announced the establishment of a street railway department in the JOURNAL, and solicited subscriptions and communications. We do not propose to continue sending the postal cards, as by this time street railway managers may conclude that our department is fully established and speaking for itself. A number of subscriptions from officers of street railway companies have already been received, but there is room on our books for many more, and we hope the time will shortly come when every person interested in the progress of street railways shall be enrolled as subscribers to the JOURNAL. It is the first railway publication to espouse their interests, and in so doing their support.

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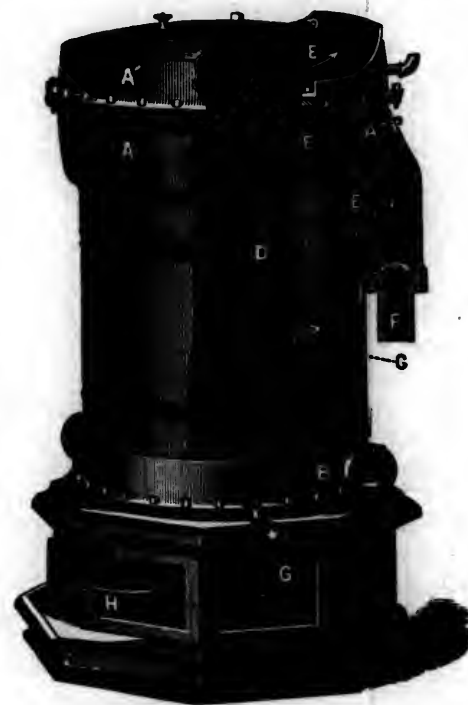
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## NEW INVENTIONS.

## TO INVENTORS AND PATENTEES.

THIS department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Street Railways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full descriptions of those most useful and important are published *free of charge*.

Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

## A WORD OR TWO OF EXPLANATION.

[We reprint the following from our last week's issue and shall keep it standing at the head of this column until the purposes of the Department of New Inventions are fully understood by all our readers].

THE department of New Inventions is conducted in the interests of our readers and of inventors of devices applicable to Railroads, Steam Navigation, Mining, Street Railways, etc. We believe that full descriptions of new and patented appliances of this nature will prove interesting to our readers, and cannot fail to bring the inventor's device into the prominent notice of that class of persons among whom he looks for the heaviest sales and royalties. No charge is made for the insertion of such description in this department, but there is a *sine qua non* requisite in all inventions before we will devote space toward their publication. They must be *new* and *valuable*. It is not our intention to offer a free advertisement to any person, and the inventor whose invention is given full description in the AMERICAN RAILROAD JOURNAL must have produced something of importance and value.

We have not established this department in a spirit of philanthropy, and do not lay claim to any special generosity in publishing descriptions of new inventions free of charge. Our aim is to increase the number of both our readers and advertisers. The continued publication of valuable patents will, we think, attract readers who are interested in the problems connected with railroad and steamboat management, mining, the management of street railways, and the like, while the value of an advertisement in the columns of the JOURNAL will ultimately be apparent to inventors of appliances tending to solve these problems. It is purely a business transaction, and we do not wish inventors to feel themselves under any

obligation to us through our description of their patents. If they choose to advertise or order a number of copies of the AMERICAN RAILROAD JOURNAL containing such descriptions, we would be glad to have them do so, and may possibly ask them for an advertisement or an order, in the form of a fair business proposition, but they are under no obligation to accept our advances. In other words, there is *nothing* obligatory on their part, but at the same time there is nothing obligatory on our part either. We reserve the liberty to ignore any invention whose description is sent us without assigning any reason for such action, and if our opinion and that of the inventor as to the utility of the invention chance to differ, we propose to be guided solely by the former.

The cause of these few words of explanation lies in the fact that many inventors seem to recognize an obligation on our part to describe in full their inventions, while they in return do not feel compelled to go to any expense in order to acknowledge such publication. It would be manifestly impossible for us to publish full descriptions of all inventions of this class, when the weekly list of new patents of the sort numbers fifty or more. Every new invention of the character mentioned above is noticed in our weekly list of patents, and we shall further endeavor to give a brief description of all, but in selecting those for extended notice, we are guided simply by their importance and general utility. Our advertising pages are open at reasonable terms to all inventors and holders of patents, but this department is entirely our own, and we must be pardoned if we choose to conduct it in the manner we deem best. If inventors desire a medium through which valuable inventions of a certain class are brought into public notice free of charge, they will aid us in this direction by subscribing to and advertising in the RAILROAD JOURNAL, but they should do so solely in a practical business way, not influenced by any feelings of obligation, while none exists upon their part so to do, nor upon our part to publish any description that is forwarded us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF FEBRUARY 20, 1883.

- 272,399. Car-Coupling: John W. Alexander, New York.
- 272,414. Sanding Device for Locomotives: John B. Collins, Altoona, Pa.
- 272,421. Three-Way Valve: Benaiah Fitts, Worcester, Mass.
- 272,429. Motor: Henry W. Gurney, East Nodaway, Ia.
- 272,430. Car-Coupling: Nathaniel Halstead, Scranton, Pa.
- 272,435. Car-Coupling: William A. Hawkins and Charles S. Hawkins, Waxahachie, Tex.

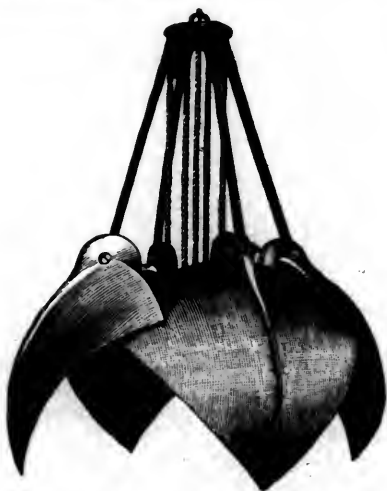
- 272,437. Tube-Scraper: Campbell P. Higgins, Philadelphia, Pa., assignor to the Babcock & Wilcox Company, New York.
- 272,447. Traction-Engine: David Lippy and Jacob Hughes, Mansfield, Ohio.
- 272,448. Combined Injector and Ejector: Geo. H. Little, Peabody, Mass.
- 272,451. Stock-Car: Alonzo C. Mather, Chicago, Ill.
- 272,455. Grain-Car Door: Don D. Miles, Aurora, Ill.
- 272,456. Condenser for Steam-Pumps: William A. Miles, Copake Iron Works, N. Y.
- 272,464. Electric Railway-Signal: Edward L. Orcutt, Somerville, Mass.
- 272,477. Metallic Sleeper for Railways: Henry Reese, Baltimore, Md.
- 272,504. Steam-Boiler Furnace: Charles H. Wilson and Samuel S. Wilson, Paducah, Ky.
- 272,508. Car-Axle Box: Robert Zeppenfeld, St. Louis, Mo.
- 272,511. Eccentric: Russell R. Angell, Janesville, Wis., assignor of two-thirds to Caleb Joshua Blakely and Lucius Nathan Williamson, both of same place.
- 272,520. Berth-Guard for Sleeping-Cars: Henry S. Billings, Hornellsville, N. Y.
- 272,550. Coal-Car: David Hoyt, West Albany, assignor of one-half to Charles R. Hicks, Troy, N. Y.
- 272,554. Street-Railroad Rail: Tom L. Johnson, Indianapolis, Ind.
- 272,565. Nut-Jock: John M. Mack, Cedar Vale, Kansas.
- 272,578. Steam-Boiler: John Oldham and Benjamin N. Payne, Corning, N. Y., assignors to B. W. Payne & Sons, same place.
- 272,580. Sleeping-Car: William H. Paulding, New York.
- 272,591. Fare-Box: John B. Slawson, New York.
- 272,613. Railroad-Signal: Norman Allen, Rockaway Beach, N. Y.
- 272,617. Chair for Railroad Rails: Charles Armstrong and George Abbott, Galveston, Tex.
- 272,621. Hull of Vessels: David Bainbridge, Philadelphia, Pa.
- 272,633. Locomotive: Alanson A. Blackman, Elhanan Blackman, and Hyrcanus Blackman, Suohomish, Wash.
- 272,644. Valve: James H. Blessing, Albany, N. Y.
- 272,635. Combined Check-Valve, Stop-Cock and Blow-off Valve: James H. Blessing, Albany, N. Y.
- 272,643. Car-Coupling: Baylus Cade, Scott's Depot, W. Va.
- 272,648. Reversing-Gear for Steam-Engines: Willard A. Clarke, Stillwater, Minn.
- 272,670. Traction-Engine: John H. Elward, Stillwater Minn.
- 272,676. Spike: Hervey W. Fowler, Chicago, Ill.
- 272,680. Car-Coupling: Erwin S. Graver, Philadelphia Pa.
- 272,684. Feed-Water Heater for Steam-Boilers: Edward J. Hall, Buffalo, N. Y.
- 272,689. Feed-Water Heater: John W. Heylman, Buffalo, N. Y., assignor to Edward J. Hall, same place.
- 272,712. Car-Coupling: Frank G. Lawrence, Boston, Mass.
- 272,723. Railway-Crossing Alarm: Jas. A. B. Lovett, Huntsville, Ala.
- 272,724. Electric Log or Apparatus for Ascertaining the Speed of Ships and the Rate of Currents: Robert M. Lowne, East End Finchley, County of Middlesex, England.
- 272,730. Automatic Boiler-Feeder: Thos. W. Mather, New Haven, Conn., assignor to the Automatic Safety Boiler and Engine Company, same place.
- 272,738. Car-Window Deflector: Henry B. Mears, Philadelphia, Pa.
- 272,745. Davit for Boats: J. F. Mumm, Brooklyn, N. Y.
- 272,749. Splice-Bar for Railway-Rails: Isaiah Nutt, New York.
- 272,763. Device for Changing Speed: Thomas J. Perrett, Jamestown, N. Y.
- 272,765. Recording-Compass: Robert Pickwell, Kingston-upon-Hull, County of York, England.
- 272,770. Steam-Boiler Cleaner: Christ Reiser, Prairie du Chien, Wis., assignor to the Reiser Steam-Boiler Cleaner Company (Limited), same place.
- 272,781. Hot-Bed for Cooling Railroad-Rails: William K. Seaman, Scranton, Pa.
- 272,783. Train-Indicator: Orry M. Shepard, Boston Mass.
- 272,789. Railroad-Switch: William Spielman, Oneonta,



- N. Y., assignor to Thomas H. Rockwell, same place.  
 272,793. Lubricator: Allen W. Swift, E mira, N. Y.  
 272,797. Cut-Off Mechanism: James Thomas, Catasauqua, Pa.  
 272,798. Steam-Generator: Hubert P. Tilton, Albion, Me., and Rufus E. Tilton, Brockton, Mass.  
 272,800. Apparatus for Casting Couplings for Shafts: William Tucker, East Brookfield, Mass., assignor of one-half to Josiah Hobbs, same place.  
 272,806. Apparatus for Removing Impurities from Feed-Water: Dyson D. Wass, New York, assignor to himself, John C. Henderson, Sinclair Stuart, and Thornton Motley, all of same place.  
 272,809. Cut-off Valve: Benjamin Webster, Bridgeport, Conn.  
 272,818. Rotary Engine: Thomas Wilbraham and John W. Wilbraham, Philadelphia, Pa., assignors to themselves and James Wilbraham, same place.  
 272,819. Stuffing-Box for Journals: John W. Wilbraham, Philadelphia, Pa., assignor to himself, and Thomas Wilbraham and James Wilbraham, both of same place.  
 272,827. Valve: Mahlon M. Zellers, Kent, Ohio.  
 272,839. Electric Interlocking Railway Signal and Switch System: John K. Knight, New York, and William H. Baker, Brooklyn, N. Y.; said Knight assignor to said Baker.  
 272,840. Car-Coupling: Henry Kroblen, Boone, Iowa.  
 RE-ISSUES.  
 10,289. Car-Truck: Edward B. Meatyard, Geneva, Wis.  
 10,290. Gas-Engine: Lewis C. Parker, Robinson, Kans.

### Johnson's Automatic Grappling Bucket, Dredger, Digger and Excavator.

THIS device is the invention of FRANK G. JOHNSON, of this city, and is manufactured and sold by the Johnson Manufacturing Company, whose headquarters are at 165 and 167 Broadway, New York. It consists of a number of steel blades in the shape of spherical triangles of equal dimensions. A fixed radial arm extends from the base of each triangular blade to the common spherical center, and at the intersections of these arms with the blades, jointed levers are attached which at their other extremities are hinged to a circular disk of steel, through which run two chains, or ropes, to the spherical center. At this center the radial arms join a cylindrical shaped body to which the chains are attached by pulleys. The tension of one of these chains upon the pivotal center of the arms closes and hoists the bucket, while the tension of the other opens and lowers it. When closed, the bucket appears in the form of a half sphere, and when opened, the blades separate at their points, overlapping near their base, as shown in the accompanying illustration.



In operating the dredger it is dropped upon the substance to be removed with its blades opened, when the tension of the first chain upon

the pivotal center closes the blades, forcing them down in and around the material until the bucket is closed and filled, when it is raised and swung by a boom to the receptacle containing the material removed, when the tension of the second chain will open the bucket and, after dropping its contents, again lower the device to its point of operation. The spherical bucket is formed of four, six, eight, ten, twelve or more blades, according to the nature of the work to be performed, and it is made of various sizes, differing in capacity from fifteen to ninety cubic feet.

It is a peculiarity of this device that the more it is resisted by the material it attacks, the more firmly the blades take hold and penetrate, grappling and closing upon its work with a mechanical purchase of five to one. This peculiarity permits of its use in both hard and soft digging, while there is no limit to the depth at which it may operate. The blades move on the surface of the sphere of which they are sections, thus there is no power wasted in moving the material before it is raised. The machine is cheap, simple and effective, and not liable to injury or disarrangement. Its daily capacity in removing material varies from 500 to 4,500 cubic yards, according to the size of the bucket employed.

Last week a representative of the AMERICAN RAILROAD JOURNAL accompanied a party down New York Harbor on a steamer to witness the device in operation at hard digging. The dredger was at work off the foot of Thirty-ninth Street, Brooklyn, and it performed its functions in a most satisfactory manner. It attacked with equal readiness both hard soft soil, and needed the service of but one person to control its operations. Its action, compared with that of ordinary dredgers, is analogous to that of a pointed spade contrasted with that of a shovel. On the steamer a model was employed to illustrate the facility of the machine for handling coal and sand, and its operations in these respects were equally satisfactory.

The device was originally invented to remove city refuse, but its inventors enlarged its sphere of action until at present it is adapted to hard, soft, deep and shallow dredging, placer mining, excavating for railroads, canals, cellars, etc., and to the handling of phosphates, coal, dirt, sand, mud, city refuse, broken stone, ores, salt, manure, guano, and almost every material but solid rock.

### Car-Axle Box.

PATENTED BY HENRY MILLHOLLAND OF PHILADELPHIA, PA., ASSIGNOR OF AN INTEREST TO ROBERT W. LESLEY AND C. V. GRANT, OF 257 SOUTH FOURTH STREET, SAME PLACE.

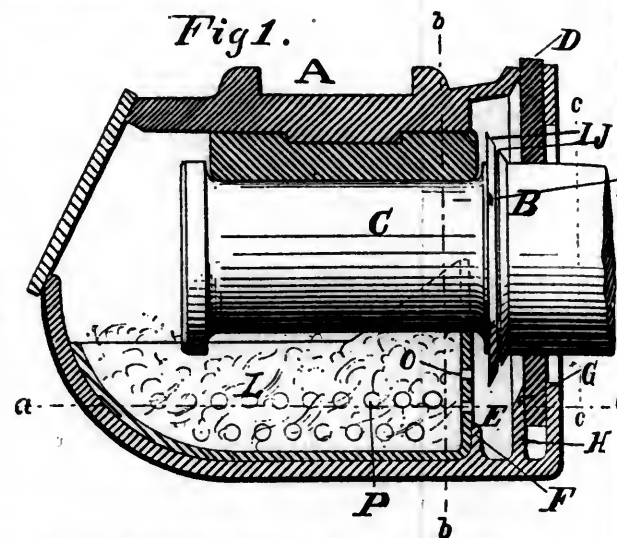
THE lubricant commonly used in car-axle boxes being that to which this device is adapted, is oil mixed with, and held in suspension by woolen waste or equivalent capillary substance. The waste is saturated with oil previous to its introduction into the box, and is commonly termed "packing."

This invention embraces certain improvements whereby the oil is prevented from escaping from the box, with the result that the

consumption of lubricant is reduced to a minimum, and an important economy effected in railroad expenditures.

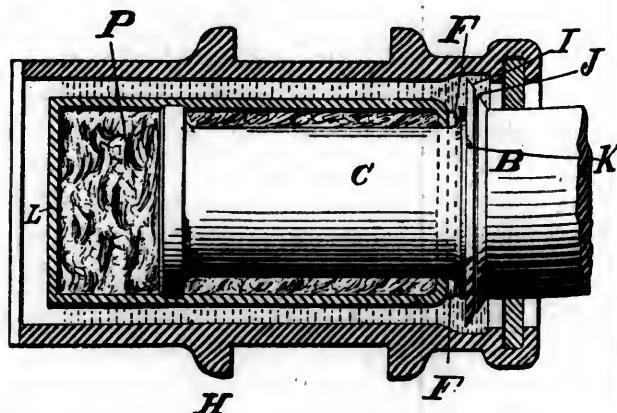
In order to establish the requisite contact between the packing and the journal, it is necessary to press the packing into the box forcibly. The result of this forcible pressure is that much of the oil contained in the waste at the time of its introduction into the box is expelled therefrom, and there being no provision in boxes as heretofore constructed for its retention within the box, it escapes from the box and is lost.

Specifically considered, the invention consists in the provision, within an ordinary axle-box, of a channel or reservoir, so to speak, for the reception of lubricant expelled from the packing in the operation of filling the box. This channel is formed by the employment of a removable packing receptacle of novel construction, and furthermore in certain improvements in axle-collars.



In the accompanying drawing, A represents a well-known form of axle-box, B is the axle and C the journal. D is a sectional washer, perfectly made in two parts, the sole office of which is to exclude dust or other substance harmful to the lubricant or wearing surfaces of the journal or bearing. E is a cavity formed transversely across the rear base of the box by the erection of one or more studs or projections F; and G is an inclined surface upon the interior wall, H, substantially of the character

Fig. 3.

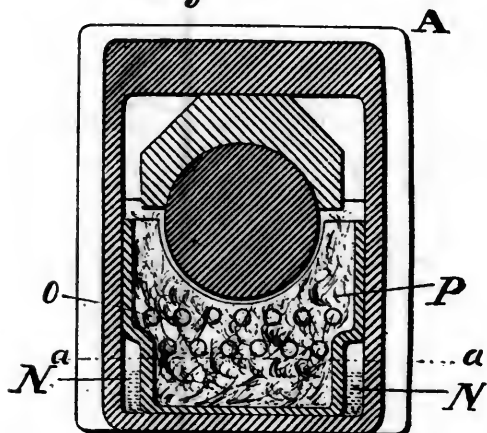


employed by the inventor in an improved axle-box for which a former patent was granted. In line above the cavity E, and to the front of the inclined surface referred to is the improved form of axle-collar, I.

The collar above referred to relates to a class of devices employed upon axles for the return of the lubricant by centrifugal force to the interior of the axle-box. Ordinarily these collars are formed as a conical-faced ring, shrunk or otherwise secured upon the axle, and fashioned in the form represented in the inventor's former patent.

The improvement consists in circumferentially channeling the collar, as indicated by the letter J, and in notching the extreme edge or periphery of the collar at different points, as at K. The notches retain the oil, which, in the operation of the device, accumulates upon the revolving collar until they hold a sufficient quantity as to be thrown from the periphery of the collar, while the groove collects any oil that may run down the back of the collar when at rest, and conducts it to the lowermost portion, whence it drops into the cavity E. The collar not only performs its usual function of intercepting the lubricant on its way of escape along the axle, and of returning it centrifugally to the interior of the box, where it is again absorbed by the packing and conducted to the journal for lubrication, but it performs these usual functions in a very thorough and efficient manner.

Fig. 4.



L is the removable packing tray, which is a perforated box, of metal or other suitable material, substantially of the form represented. The high bridge which encircles the journal prevents the packing from intruding upon the rear of the box, and holds it in close contact with the journal. The lower portion of this tray rests upon the bottom of the box and is contracted lengthwise on both sides, in order to provide two longitudinal channels, N, between the lower portion of the exterior of this tray and the sides of the box. These channels communicate with the cavity E and form a trough on three sides of the tray. This trough is the reservoir for the expelled lubricant. The sides and back of the tray are perforated with a series of holes O, which afford means of entrance for the expelled lubricant from the trough to the packing in the tray, as well as its means of escape into the trough when the packing is introduced.

The advantages claimed for this box are that it prevents all wastage of oil by "flooding" at the time of the packing or "sponging" the box and also escape of oil along the axle in the direction of the wheel, insures dry wheel treads for the operation of the brake blocks and requires less packing material than by the system

now in use. For information address Robert W. Lesley, 257 South Fourth Street, Philadelphia, Penn.

### Coupling and Linch Pin.

ISAAC H. TRABUE, OF LOUISVILLE, KY., PATENTEE.

THIS device consists of, 1st., a cylindrical coupling-pin of two longitudinal sections adapted to slide upon the common sectional plane, and connected together at or near the lower ends by a catch which is opened or closed by sliding the sections upon each other; and 2d., a cylindrical coupling-pin of two longitudinal sections adapted to slide upon the common sectional plane and connected together at or near their lower ends by means of a catch pivoted to one section, and having an arm provided with a cross-pin which works in a slot on the other section. The pin is designed as a king-bolt for wagons, a linch pin, and a coupling pin for cars. It is claimed to be fifty per cent stronger and less liable to break than the ordinary solid pin.

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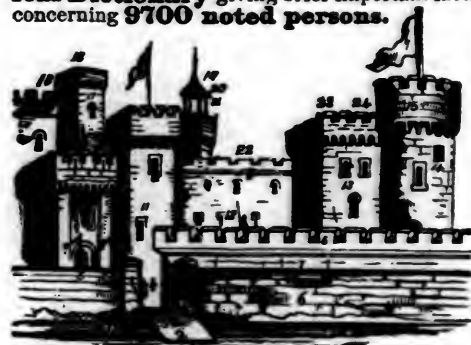
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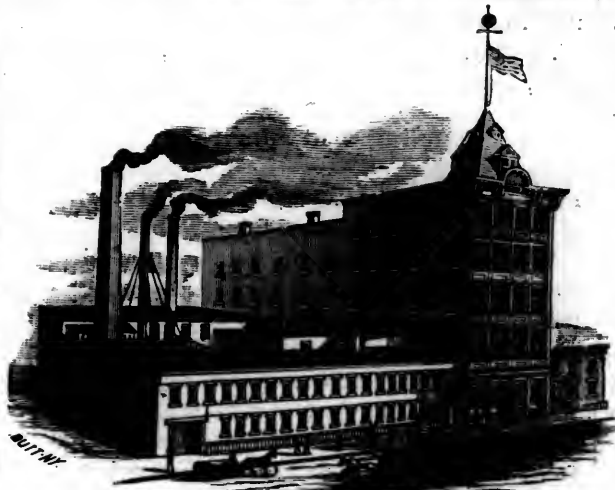
For a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. Boynton, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" saw, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion; the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth,

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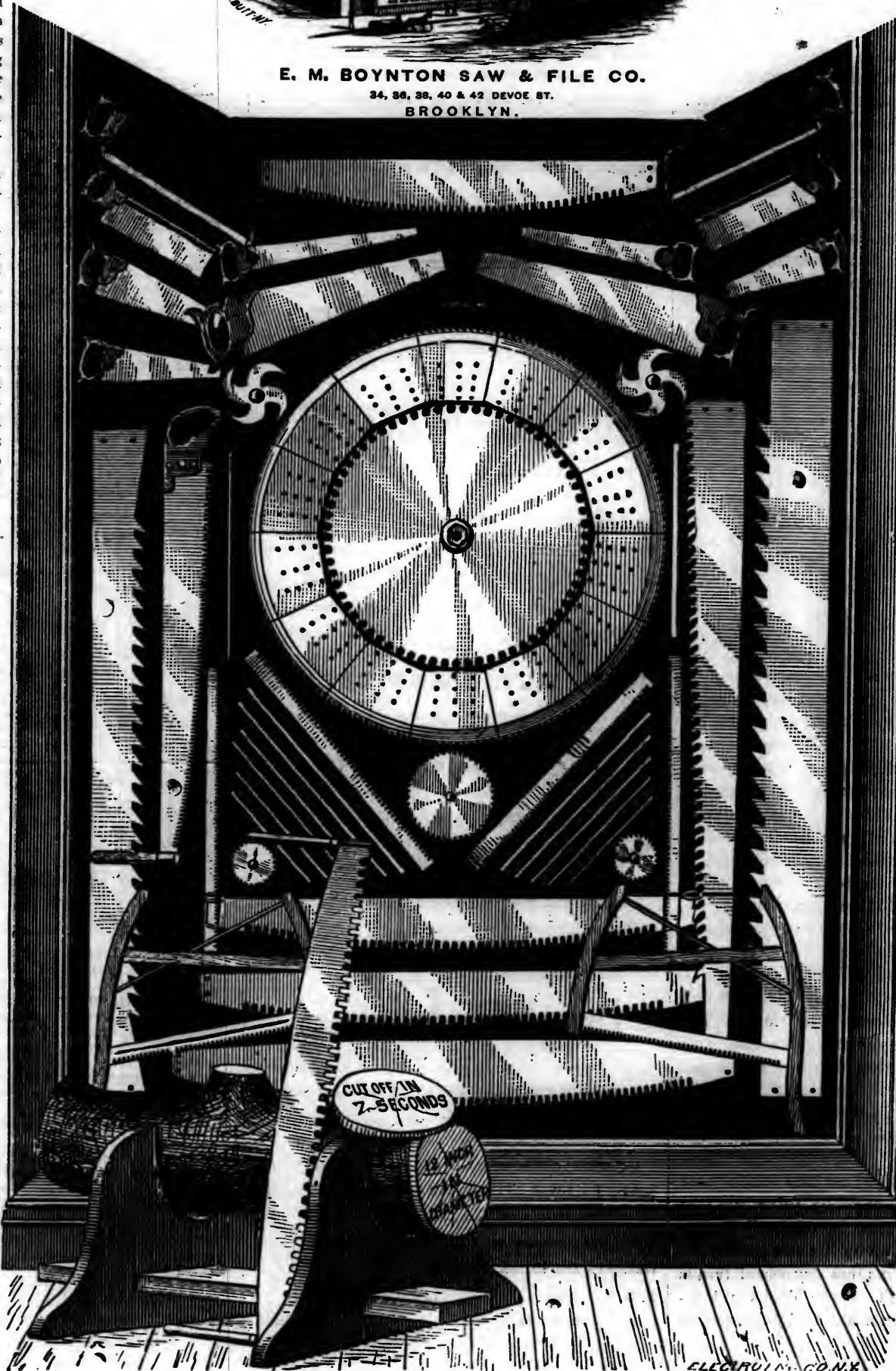
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edge being given with whetstone—saving of friction, as well as files, steel, strength and time. 3d. Double teeth—are stiffer, less vibration. 4th. Consequently, may be and are gummed longer, saving expense and frequent repairs. 5th. Are stronger than any other. 6th. Directcutting (upwards) avoids grit, divides resistance, relieves the pressure and wear on point of teeth—avoiding the grinding, weighing and clogging of old style saws. 7th. No waste of power, as in the old scratching system, the cutting being direct, uniform, economical and continuous. 8th. In direct cutting, edge holds longer than if dragged over the timber. 9th. It is the front cut of the hand saw cutting both ways. 10th. This saw cuts with less friction, much easier and faster than any heretofore known, while more simple than any other patent saw. The "Lightning" combines the two principles in one tooth. One point of M follows while the other is cutting, which regulates the feed, and enables the teeth of the plow or vertical form to be used for both cross cutting and slitting. This patent tooth is as simple as any hand-saw tooth to sharpen. Boynton's saws were effectually tested before Judges at the Philadelphia Fair, July 6 and 7. An ash log, eleven inches in diameter, was sawed off, with a four foot "Lightning" cross-cut, by two men, in precisely six seconds, as timed by the Chairman of the Centennial Judges of Class 15. The speed is unprecedented, and would cut a cord of wood in four minutes. The representatives of Russia, Austria, France, Italy, Spain, Belgium, Sweden, England and several other countries were present, and expressed their high appreciation. Many of the leading saw manufacturers of the world were present, but not one accepted Mr. Boynton's \$1,000 challenge. The M principle is applied to saws of various kinds and for all sorts of purposes. In consequence of the practical value of the patents taken out by Mr. Boynton the earnings of the factory have multiplied five-fold in five years, and there is no doubt that an even more rapid growth will be recorded in the future.—*New York Scientific Times and Mercantile Register*, Feb. 3, 1883.

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ESTABLISHED 1831.

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SECOND QUARTO SERIES.—VOL. XXXIX., No. 10.]

NEW YORK, MARCH 10, 1883.

[WHOLE No. 2,445.—VOL. LVI.]

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quested for our special departments devoted to Finance,  
Commerce, Street Railways, and New Inventions. All  
communications should bear the name and address of  
the writer, not necessarily for publication, but to insure  
the editor's attention.

### ANOTHER IMPROVEMENT.

WITH this number the AMERICAN RAIL-  
ROAD JOURNAL is enlarged by a further  
addition of four pages, giving it a total of thirty-  
two pages weekly, exclusive of the cover. It  
was our intention to postpone this enlargement  
until arrangements had been perfected for the  
establishment of an Insurance Department, but  
the increasing number of our advertisers and  
the consequent pressure upon our editorial and  
news columns compels us to make the addition  
sooner than contemplated. We consider the in-  
terests of our readers as paramount, and should  
the number of advertisements sent to the JOUR-  
NAL continue to increase, higher advertising rates  
will be the next step taken to prevent the exclu-  
sion of reading matter. Another enlargement  
of the JOURNAL will not be practicable for some  
time to come, and we know of no other way in  
which to show justice to both readers and ad-  
vertisers than by increasing our terms for ad-  
vertising.

The AMERICAN RAILROAD JOURNAL is now one  
of the largest and best conducted railway pub-  
lications in the world, as well as the oldest and  
most attractive in appearance. Its present in-  
terior form will be permanently adopted, and  
in a few weeks our new feature, the Insurance  
Department, will be established. Minor im-  
provements will be introduced from time to  
time as occasions present themselves, for we  
are not so conservative as to adhere to old cus-  
toms simply because they are old, and have  
little else to recommend them. The present  
form of the JOURNAL and the sequence of its  
departments have been adopted as the most  
convenient for our readers as well as beneficial  
to our advertisers, and will be maintained un-  
less a better arrangement suggests itself. The  
JOURNAL will be mailed to subscribers on Friday  
afternoon of every week reaching the majority  
of them on Saturday, the date of publication,  
unless unavoidable and unseen delays interfere,

which is a frequent possibility with every  
weekly publication. Its Financial, Commer-  
cial and News Departments, and the editorial  
and statistical pages are the last put in type,  
in order that they may convey the latest intelli-  
gence with appropriate comment, and oppor-  
tunity is reserved to give room to any article,  
note or communication on matters of special  
interest until the final moment of going to  
press.

In less than a month the AMERICAN RAILROAD  
JOURNAL is one-third enlarged from its former  
size, and thoroughly and systematically re-  
modeled, and we trust its readers will recognize  
the fulfilment of promises made in these col-  
umns some weeks ago, and credit us with being  
severely in earnest in our efforts to increase  
the JOURNAL's sphere of usefulness and enlarge  
its field of operations.

### THE FIVE CENT FARE BILL.

GOVERNOR CLEVELAND'S veto of the  
bill reducing the fare on the elevated  
roads in this city to five cents is to us as grati-  
fying as it is unexpected. Popular clamor for  
the passage of this measure had been so great  
that we doubted if Governor CLEVELAND, with  
all his just and impartial views on questions of  
legislation, would be able to withstand the  
pressure brought to bear upon him, and that he  
has done so is a convincing proof that the peo-  
ple of New York made no error in electing him  
to his present position.

As might be expected, the Governor based  
his disapproval of the bill solely upon legal and  
constitutional grounds. His veto message to  
the legislature was lengthy and exhaustive, and  
in every respect an admirable document, which  
viewed the measure in a light of strict impar-  
tiality. It dwelt first upon the history of the  
elevated roads, tracing them from their incep-  
tion to the present time, and subsequently  
pointed out the obligations of the State to ful-  
fill their part of the contract irrespective of



alleged irregularities and infractions of the roads themselves, until proper and legal examination of their conduct had been made as required by the provisions of the general railroad act.

We have not the space to quote in full the text of the Governor's veto, but reprint such portions as should fully justify his disapproval of the measure in the minds of all fair and impartial persons. In citing the concessions made to the elevated roads by the State, and the various laws passed regulating their immunities and privileges, he says:

"Another act was passed in 1875, commonly called the Rapid Transit act, which provided for the appointment of commissioners, who, among other things, were authorized to fix and determine the time within which roads subject to the provisions of the act should be completed, together with the maximum rates to be paid for transportation and conveyance over said railways and the hours during which special cars should be run at reduced rates of fare. Commissioners were duly appointed by the Mayor of the city of New York, as provided by this act, who fixed and determined the route of the road of the New York Elevated Railroad Company, and prescribed with the utmost particularity the manner of its construction, and thereupon deliberately agreed with said company that it should charge as fare upon trains and cars other than what were called by the parties commission trains and cars, for all distances under five miles not to exceed ten cents, and not to exceed two cents for each mile or fraction of a mile over five miles until the fare should amount to not exceeding fifteen cents for a through passenger from and between the Battery and the intersection of Third avenue and 129th street, and from and between the Battery and High Bridge not to exceed seventeen cents for a through passenger, and that for the entire distance from and between the Battery and Fifty-ninth street the fare should not exceed ten cents per passenger. It was further agreed between the said company and the Commissioners that commission trains should run during certain hours in the morning and evening for the accommodation of the public and the laboring classes, upon which the fare should not exceed five cents from and between the Battery and Fifty-ninth street, nor any greater sum for any distance not exceeding five miles; that it should not exceed seven cents for a through passenger from and between the Battery or any point north thereof and the Harlem River, and that such fare should not exceed eight cents on such commission cars and train from and between the Battery and High Bridge. And it was further agreed by said company that when the net income of the road, after all expenditures, taxes and charges are paid, should amount to a sum sufficient to pay exceeding ten per cent per annum on the capital stock of the company, that in such case and within six months thereafter, and so long as net earnings amount to a sum sufficient to pay more than ten per cent aforesaid, the said company would run commission trains on its road at all hours, during which it should be operated at the rates of fare last mentioned. Having thus completed an agreement with this company, the Commissioners transmitted the same to the Mayor of the city of New York, accompanied by a very congratulatory report of their proceedings, whereupon the Mayor submitted the same to the Board of Aldermen, by whom it was approved. This was in the latter part of the year 1875. Since that time the New York Elevated Railway Company, upon the faith of the laws which have been recited, and its proceedings with the Commissioners, at a very large expense has completed its road from the Battery to Harlem River, a distance of about ten miles. The bill before me provides that notwithstanding all the statutes that have been passed and all that has been done thereunder passengers shall be carried the whole length of this road for five cents, a sum much less than is provided for in any of such statutes or stipulated in the proceedings of the Commissioners."

No clearer exposition of the obligations of

the State could be desired. The elevated roads have adopted rates of fare lower than their contracts with the State demanded, yet notwithstanding this fact, an arbitrary law is passed making a still further reduction without the slightest shadow of fairness or legality. Regarding the alleged watering of stocks and excess of profits made by the roads the Governor points out the proper course of action for the State, under its own laws as follows:

"I am of the opinion that in the legislation and proceedings which I have detailed, and in the fact that pursuant thereto the road of the company was constructed and finished, there exists a contract in favor of this company, which is protected by that clause of the constitution of the United States which prohibits the passage of a law by any State impairing the obligation of contracts. But let it be supposed that this is not so, and that neither of these lesser companies are in any way protected from interference with their rates of fare, but, on the contrary, they are subject to all the provisions of the general railroad act under which they are both organized. Section 33 of that act reads as follows:—'The Legislature may, when any such railroad shall be opened for use, from time to time alter or reduce the rate of freight, fare or other profits upon said road. But the same shall not without the consent of the company be so reduced as to produce with said profits less than ten per cent per annum on the capital actually expended; nor unless on an examination of the amount received or expended, to be made by the State Engineer and Surveyor and the Controller, they shall ascertain that the net income derived by the company from all sources, for the year then last past, shall have exceeded an annual income of ten per cent upon the capital of the corporation actually expended.' Even if the State has the power to reduce the fare on these roads, it has promised not to do so except under certain circumstances and after a certain examination. I am not satisfied that these circumstances exist, and it is conceded that no such examination has been made. The constitutional objections which I have suggested to the bill under consideration are not, I think, removed by the claim that the proposed legislation is in the nature of an alteration of the charters of these companies, and that this is permitted by the State constitution and by the provisions of some of the laws to which I have referred. I suppose that while the charters of corporations may be altered or repealed, it must be done in subordination to the constitution of the United States, which is the supreme law of the land. This leads to the conclusion that the alteration of a charter cannot be made the pretext for the passage of a law which impairs the obligation of a contract."

This portion of the veto teaches a wholesome lesson to the Legislature. It has been a common practice for that body to overstep the limit of its powers, and endeavor to assume the triple role of law-maker, judge and jury. The Senate and Assembly are not judicial nor executive bodies, their duties being purely legislative, yet this fact is commonly ignored in measures passed in compliance with public opinion. The veto concludes with what might be called this justly merited reproof:

It is manifestly important that invested capital should be protected, and that its necessity and usefulness in the development of enterprises valuable to the people should be recognized by conservative conduct on the part of the State government. But we have specially in our keeping the honor and good faith of a great State, and we should see to it that no suspicion attaches, through any act of ours, to the fair fame of the Commonwealth. The State should not only be strictly just, but scrupulously fair, and in its relations to the citizen every legal and moral obligation should be recognized. This can only be done by legislating without vindictiveness or prejudice, and with a firm determination to deal justly and fairly with

those from whom we exact obedience. I am not unmindful of the fact that this bill originated in response to the demand of a large portion of the people of New York for cheaper rates of fare between their places of employment and their homes, and I realize fully the desirability of securing to them all the privileges possible, but the experience of other States teaches that we must keep within the limits of law and good faith, lest in the end we bring upon the very people whom we seek to benefit and protect a hardship which must surely follow when those limits are ignored.

The justice of Governor CLEVELAND's allusion to "vindictive legislation" was fully exemplified in a speech made in the Assembly by Mr. ROOSEVELT, of this city, after the reading of the message. This speech was a remarkable one, and cannot serve to benefit Mr. ROOSEVELT's reputation as a statesman, but it at least credits him for an honesty not possessed by many of his fellow legislators. He said it was with shame that he had to admit to his brother Assemblymen that when he voted for the passage of the Five Cent Fare bill he compromised with his own convictions. It was the first time in his whole public career he had cause to regret his vote. He was induced to vote for the bill, he said, in a spirit of revenge and vindictiveness against "the thieves" who managed the elevated roads. On the constitutionality of the bill he had profound doubts, but still he had been led to vote for the bill in order "to administer a lesson to Jay Gould, who had done more than any other man or class of men to debauch the public mind with his hired newspapers and his subsidized judges. It is not a question of doing right by Mr. GOULD and his associates," said Mr. ROOSEVELT, "for they are thieves. They sent up a petition here against the bill, signed by Mr. GOULD and others. If a petition had been sent up by BILLY MCGLORY and OWNEY GEOGHEGAN it would have had as much force with me. They belong to what I call the wealthy criminal class, and are to be watched if the interests of the commonwealth are to be protected."

This speech, confessing as it did inexcusable weakness and unfitness for legislative duties on the part of the speaker, nevertheless possessed the ring of truth and exposed the animus which led to the passage of the bill by the majority of the Senators and Assemblymen. It was not a measure prompted by high motives for public welfare, but simply a blow at capital as personified by GOULD, VANDERBILT and FIELD. The machinery of legislation was set in motion not to enact broad and public spirited laws, but to crush a handful of men who are unfortunate enough to possess vast wealth. Such is the result of anti-corporation warfare masquerading under the guise of anti-monopoly.

We rejoice that Governor CLEVELAND has possessed sufficient firmness and independence

to withstand the pressure of misguided public opinion; that this mean-spirited attack on corporations has met with a stinging repulse, and above all that this repulse is made by a Governor against whose personal integrity and manly freedom from corporation influence the most ardent supporter of the bill has dared not breathe a word.

If the elevated roads have watered their stock and practised illegalities, let them answer for it before the courts as might private individuals for similar unlawful acts. This course of action is suggested by Governor CLEVELAND in a passage of the veto that we have not space to quote at length, wherein he remarks: "I am not aware that the corporations have by any default forfeited any of their rights, and if they have, the remedy is at hand under existing laws." This sentence alone conveys the whole pith and substance of his disapproval.

The loud predictions made by the promoters of the bill that it would be passed over the Governor's veto have not been fulfilled. The measure was brought up for consideration in the Assembly on Wednesday last, and despite the large majority by which it was originally carried the veto was sustained by a vote of 66 to 58. The members have awakened to a sense of their unjust error, and the people's cause has not been benefitted by that wretched bungling measure, the Five Cent Fare Bill, whose fate is now oblivion.

#### THE LATEST ANTI-MONOPOLY ISSUE IN NEW JERSEY.

THE bill introduced in the New Jersey Legislature compelling a reduction of tolls on the Plank Road between Newark and Jersey City, was smothered in the Assembly last week by a tie vote. In view of the opinion of the State Attorney General that the bill was not properly advertised as required by law, and that the contemplated measures partook of the nature of special legislation, which would be declared unconstitutional in the courts, it is perhaps well that the New Jersey legislators have avoided a blunder that would result in self stultification but the Jersey press are none the less loud in their assertions of corruption and bribery on the part of those Assemblymen who voted against the bill.

The Pennsylvania Railroad has a controlling interest in the Plank Road Company, and this reason alone is sufficient to bring down upon the friends of the latter the anathemas of the staid Jerseymen, for the Pennsylvania Road is a bugbear to the citizens of our sister commonwealth. But these same citizens are oblivious to the fact that upon them primarily rests the responsibility for their own misfor-

tunes. In bye-gone days, New Jersey always lent a willing ear to the seductive voice of monopoly, granting extraordinary charters with a lavish hand, and now she is beginning to reap the harvests of her own imprudence. The very same Pennsylvania Railroad or rather its predecessors and lessor in the State, the New Jersey Railroad and Transportation Company was met at the outset of its career by powerful monopolies who strive to check its construction and bar its progress by every obstacle within their reach. The good people of Jersey, or rather to speak more correctly, the people of good Jersey seem to forget that in order to construct bridges across the Passaic and Hackensack Rivers, the New Jersey Railroad was compelled to buy out the stock of certain Bridge and Turnpike Companies who had been given by the State the exclusive privileges of erecting bridges across navigable streams within her borders. The New Jersey Railroad and its successor the Pennsylvania, having been forced into this purchase, it is but just and natural that they should make a hard fight to maintain possession of the property when it has acquired unexpected value. Had the New Jersey Railroad been allowed to construct its own bridges at the inception of the organization nearly fifty years ago without the opposition of monopolies, the present condition of affairs would not have arisen. There is an ancient maxim which speaks of the making of beds and their occupation thereafter, and the people of New Jersey have been their own chambermaids.

Let it be thoroughly understood that we do not defend monopolies of any kind or description, but are merely reminding the people of New Jersey that upon them are being visited the sins of their political forefathers. If they can obtain legitimate relief in their present difficulties we will cordially rejoice at the success of their efforts, no matter what monopoly may suffer in consequence, but let them remember that it is a poor rule that won't work both ways. In the days gone by they have sown of the flesh and now are reaping corruption.

Regarding the alleged bribery of members of the legislature, if true, it was a disgraceful proceeding, and we sincerely hope its investigators and abettors will shortly find their way within the walls of State's Prison, where they may receive some valuable instruction in questions of finance from the large and influential numbers of prominent but misguided Jersey financiers who being unable to comprehend the distinction between *meum* and *tuum*, have found the atmosphere of Trenton best suited to their peculiar temperament. But a thought strikes us here that this constant hue and cry of

"bribery and corruption" has a demoralizing effect upon State reputation. If wicked, sinful railroads will resort to dishonest means in order to carry out their private measures they are forced to seek affiliation with wicked, sinful legislators to effect such ends, and the people of New Jersey, or of any State can thwart their occult and evil schemes by electing honest representatives. Prevention as well as remedy is in their own hands, and if in spite of all their efforts, dishonest Jerseymen still outnumber the honest in New Jersey's legislative halls it can only be for the same reason that white sheep give more wool than black—because there are more of the former in existence.

#### EDITORIAL NOTES.

THE River and Harbor Improvement Bill was passed in the House of Representatives on Friday of last week, by a vote of 112 to 90, but the corrupt appropriation was subsequently strangled in the Senate, that body postponing its consideration and thus effectually disposing of the measure. So the Forty-seventh Congress goes out with the same unsavory odor permeating its actions that has assailed the public nostrils since its organization. Doubtless there have been weaker and more corruptible legislative bodies than this Congress, but their name is not legion. Speaker KEIFER never spoke more truly than when in his closing address to the House he declared that "in a moment more this House of Representatives will be known only in history." Certainly they will not be known in their good works. The future career of the distinguished jobbers who for two years have treated legislation as a national plaything is not difficult to determine. In the language of the *Hon. Bardwell Stote*, as personated by the eminent comedian, Mr. FLORENCE, they will go down to their graves "unhonored and unhung."

WE publish this week in our news columns the names of the commissioners and officers of the National Exposition of Railway Appliances to be held in Chicago in May, together with the list of premiums for articles exhibited in Department A, devoted to Rolling Stock. The remainder of the premium list will be published next week. Mr. E. H. TALBOTT, the Secretary, writes us from Chicago as follows:

"I have read with pleasure the article in your Street Railway Department, and am much pleased that you are disposed to render the Exposition so much friendly support. The railway journals of the country certainly ought to give this important undertaking their most earnest and persistent support, and I am pleased to note that most of them are doing so. You may rest assured that the Exposition will be a magnificent success. The applications already received, and the preparations already being made, leave no doubt upon this point. The trouble which already stares us in the face is how to take care of all that is likely to be brought."



## NEWS DEPARTMENT.

[Items of information suitable for this department and especially those adapted for the columns devoted to the Organization, Incorporation, Construction and Consolidation of Railways, are earnestly desired from our readers.]

## Officers and Premium List of the National Railway Exposition.

## OFFICERS:

Hon. LUCIUS FAIRCHILD, President.

GEO. M. PULLMAN and AARON FRENCH, Vice-Presidents.

J. MCGREGOR ADAMS, Treasurer.

E. H. TALBOTT, Secretary.

## COMMISSIONERS:

Hon. LUCIUS FAIRCHILD, Ex-Governor of Wisconsin and late Minister at Madrid, Spain.

GEO. M. PULLMAN, President Pullman's Palace Car Co., Chicago.

AARON FRENCH, Pittsburgh Car-Spring Co., Pittsburgh.

J. MCGREGOR ADAMS, Adams and Westlake Mfg Co. etc., Chicago.

E. V. CHERRY, Vice-President Post & Co., Railway Supplies, Cincinnati.

A. G. DARWIN, President Allen Paper Car-Wheel Co., New York.

O. W. POTTER, President North Chicago Rolling Mill Co., Chicago.

H. E. SARGENT, late General Manager Northern Pacific Railroad, Chicago.

JAMES McMILLAN, President Michigan Car Co., etc. Detroit.

GEO. WESTINGHOUSE, Jr., President Westinghouse Air-Brake Co., etc. Pittsburgh.

J. H. BASS, Prop. Bass' Car Wheel Works, Fort Wayne.

E. H. WILLIAMS, Baldwin Locomotive Works, Phila.

WM. S. EATON, National Tube Works Co., etc. Boston.

WM. CHISHOLM, President Cleveland Rolling Mill Co., etc. Cleveland.

THOMAS M. CARNEGIE, President Edgar Thomson Steel Co., etc. Pittsburgh.

W. H. DOANE, President J. A. Fay & Co., Wood-Working Machinery, Cincinnati.

M. M. BUCK, Railway Supplies, St. Louis.

C. W. ROGERS, Vice-President Am. Live Stock and Meat Transportation Co., etc. New York.

JOHN E. GREEN, Vice-President Louisville Railway Supply Co., Louisville.

H. CLAY EVANS, Vice-President and General Manager Roane Iron Co., Chattanooga.

C. D. PETERS, Railway Supplies, London, England.

E. H. TALBOTT, President and Manager "The Railway Age," Chicago.

## EXECUTIVE COMMITTEE:

Hon. LUCIUS FAIRCHILD, E. V. CHERRY,

J. MCGREGOR ADAMS, A. G. DARWIN,

H. E. SARGENT, E. H. TALBOTT.

## PREMIUM LIST.

## DEPARTMENT A—ROLLING STOCK.

## CLASS NO. 1—LOCOMOTIVES.

Best Display of Locomotives.....	Grand Gold Medal
" Standard Gauge Passenger.....	" "
" Narrow Gauge Passenger.....	" "
" Standard Gauge Freight.....	" "
" Narrow Gauge Freight.....	" "
" Switching.....	" "
" Logging and Mining.....	" "
" Locomotive Involving Important New Principles.....	" "
" Locomotive Balance.....	Bronze
" Locomotive Clock.....	" "
" Steam Gauge Cock.....	" "
" Stop Cock.....	" "
" Engineer's Torch.....	" "
" Locomotive Gong.....	" "
" Headlight (to Burn Oil).....	Gold
" Headlight (Electric).....	" "
" Steam Gauge.....	Silver
" Water.....	Bronze
" Gauge Test Pump.....	" "
" Grate Bar.....	Silver
" Engineer's Hammer.....	Bronze
" Injector.....	Silver
" Locomotive Pump.....	" "

" Stack.....	" "
" Jack.....	" "
" Bell.....	" "
" Oil Cup.....	Bronze
" Locomotive Oiler.....	" "
" Oiler Set.....	Silver
" Headlight Reflector.....	" "
" Coal Scoop.....	Bronze
" Water Gauge Glass.....	" "
" Wire Cloth.....	" "
" Cab Lamp.....	" "
" Locomotive Safety Valve.....	Silver
" Steam Muffler.....	" "
" Boiler Feeder.....	" "
" Spark Arrester.....	Gold
" Smoke Consumer.....	" "
" Device to Prevent Slipping of Wheels.....	Silver
" Steam Whistle.....	" "
" Locomotive Steel Tire.....	Gold

## CLASS NO. 2—CARS.

" Display of Cars.....	Grand Gold
" Private or Officer's.....	" "
" Hotel.....	" "
" Dining.....	" "
" Sleeping.....	" "
" Drawing-room.....	" "
" Day.....	" "
" Mail.....	" "
" Baggage.....	Silver
" Refrigerator.....	Gold
" Stock.....	" "
" Box.....	Silver
" Flat or Gondola.....	" "
" Coal, Ore or Gravel Dump.....	" "
" Wrecking.....	" "
" Road or Section Master's.....	" "
" Hand.....	" "
" Velocipede.....	" "
" Steam Inspection.....	" "
" Combination Stock and Freight.....	Gold
" Tank Car.....	Silver

## CLASS NO. 3—RUNNING GEAR.

" Steel Axle (Master Car Builder's Standard).....	Silver
" Iron Axle (Master Car Builders' Standard).....	" "
" Hollow Axle.....	" "
" Passenger Train Brake.....	Gold
" Brake Shoe.....	Silver
" Springs (Elliptic).....	Gold
" Springs (Spiral).....	Silver
" Springs (Bearing).....	" "
" Springs (Buffer or Draw).....	Bronze
" Springs (Rubber).....	Silver
" Equalizing Spring.....	" "
" Draw Bar for Freight Car.....	" "
" Journal Box.....	" "
" Journal Box Lid.....	" "
" Journal Bearing.....	" "
" Steel Tire for Car Wheels.....	Gold
" Steel Tire Metal Wheel.....	" "
" Cast Iron Wheel.....	" "
" Steel Tire Combination Wheel.....	" "
" Car Step.....	Bronze
" Passenger Car Platform, Coupling and Buffer.....	Gold
" Passenger Car Six-Wheel Truck.....	" "
" Passenger Car Four-Wheel Truck.....	" "
" Freight Car Truck.....	" "
" Automatic Freight Car Coupling.....	Silver
" Freight Car Coupling (Non-Automatic).....	" "

## CLASS NO. 4—INTERIOR FURNISHINGS FOR PASSENGER CARS.

Best Display.....	Gold Medal
" Bell Cord Fixtures, complete.....	Silver
" Bell Cord.....	Bronze
" Car Door Butts.....	" "
" Car Door Latch (Saloon).....	" "
" Car Door Lock.....	" "
" Seat End.....	Silver
" Seat End Lock.....	Bronze
" Seat End Fixtures.....	" "
" Curtain Goods.....	Silver
" Curtain Roller.....	Bronze
" Curtain Rod Fixtures.....	" "
" Deck Light Catch.....	" "
" Display of Car Lamps.....	Gold
" Center Lamp (one burner).....	Silver
" " (two burners).....	" "
" " (three burners).....	" "
" " (four burners).....	" "
" Electric Light for Cars.....	Gold
" Postal Car Lamp.....	Silver
" Side Lamp.....	" "
" Door, Window and Deck Glass (Illuminated).....	" "
" Heater.....	Gold
" Stove.....	Silver
" Head Lining (Cloth).....	" "
" Head Lining (Wood).....	" "
" Hopper.....	" "
" Urinal.....	" "
" Window Lift.....	Bronze
" Sash Lock.....	" "
" Deck Light Opener.....	" "
" Decorating Material.....	Silver
" Sash.....	Bronze
" Window Blind.....	" "
" Window Blind Lift.....	" "
" Sash Spring.....	" "
" Sash Stop.....	" "
" Seat Frame.....	Silver
" Upholstering.....	" "

" System of Ventilation.....	Gold
" Dust Guard.....	Bronze
" Display Fancy Woods and Veneers.....	Gold
" Water Cooler.....	Bronze
" Berth and Seat Springs.....	Silver
" Berth Curtain Hook and Fixtures.....	Bronze
" Wash-room Pump.....	Silver
" Cooking Range.....	" "
" Reclining Chair.....	" "
" Revolving Chair.....	" "
" Washstand for Parlor or Sleeping Car, complete.....	" "
" Basket Rack.....	" "
" Door Holder.....	Bronze
" Door Knob.....	" "
" Coat Hook.....	" "
" Hat Hook.....	" "
" Cuspidore or Spittoon.....	" "
" Headboard and Fixtures (for Sleeping Car).....	" "
" Folding Bed for Car, complete.....	Silver
" Curtain Rod Bracket.....	Bronze
" Double Acting Hinge.....	" "
" Electric or Other Call Bell.....	" "

## CLASS NO. 5—FREIGHT CAR APPLIANCES.

" Car Seal.....	Bronze
" Car Replacer.....	Silver
" Car Pusher.....	Bronze
" Grain Car Door.....	Silver
" Freight Car Door.....	" "
" End Door Inside Fastener.....	Bronze
" Freight Car Lock.....	" "
" Door Hanger.....	" "
" Metal Roofing.....	Silver
" Wood Roofing.....	" "
" Combination Roofing.....	" "

[TO BE CONTINUED.]

## ORGANIZATION.

At the concluding session of the American Institute of Mining Engineers, held at the Institute of Technology, Boston, on the 23d ult., the following officers were elected: President, Robert W. Hunt, Troy, N. Y.; vice-presidents (for two years), S. F. Emmons, Denver, Col., W. C. Kerr, Washington, D. C., S. T. Wellman, Cleveland, O.; managers (for three years), John Birkinbim, Philadelphia, Pa., Stuart M. Burk, Walburg, W. Va.; E. S. Moffat, Scranton, Pa.; treasurer, Theodore D. Rand, Philadelphia, Pa.; secretary, Thomas M. Drown, Easton, Pa. The secretary presented the report of the Council, from which it appeared that the receipts for the year had been \$13,169.05 and the expenses \$8,140.53, leaving a balance of \$5,028.52; the receipts were much higher than those of the previous year, owing to a large increase of membership and the payment of life memberships. There are now 5 honorary members, 50 foreign members, 1,009 members and 149 associates, and during the year 10 have resigned, 25 have been dropped and 8 have deceased.

In compliance with the terms of its concession, the International Construction Company has published in the *Diario Oficial* a list of the officers and directors of the road, with a brief statement of work done to date. The officers are: C. P. Huntington, president; I. E. Gates, secretary and treasurer; John B. Frisbie, agent in Mexico; Robert B. Gorsuch, chief engineer, and James Converse, Chief of Construction at Piedras Negras. The formal surveys for the road were commenced at the Rio Grande in November, 1881, and construction begun November 27, 1882. The company has issued no obligations. Reports from the Rio Grande state the progress of construction at the rate of a mile a day.

A new bank has been organized in this city under the laws of the State, with a capital of \$300,000, and will be known as the Home Bank. It will begin business at Forty-second street and Eighth avenue on or about May 1. The stockholders have chosen the following directors: George I. Seney, Henry A. Hurlbut, Will-

iam Campbell, Edward Schwyer, G. Waldo Smith, George Starr, Samuel Shethar, William P. Esterbrook, Frank Tilford, O. Wessell, Richard Kelly, George Mulligan, Francis Blessing, George E. Ketcham and Edmund Stephenson. These gentlemen represent \$20,000,000 capital.

At the annual meeting of the stockholders of the Camden and Atlantic Railroad Company, held in Camden, N. J., on the 22d ult., the following board of directors was elected: William L. Elkins, James B. Dayton, Thomas H. Dudley, Edmund E. Read, Crawford Miller, Charles P. Stratton, Edward P. Kershner, Benton K. Jamison, Arnold G. Plummer, John B. Hay, Samuel Fox, John Pearce and Enoch Doughty. The board subsequently elected William L. Elkins president, and Daniel M. Zimmerman secretary and treasurer.

At a meeting of the stockholders of the Housatonic Railroad Company, held in Bridgeport, Conn., on the 23d ult., the following directors were elected: William H. Barnum, of Lime Rock; William E. Down, of Derby; Edward Leavitt, of New York; A. B. Mygatt, of New Milford; Horace Nichols and W. D. Bishop, of Bridgeport; David S. Draper and John H. Peck, of New York, and Charles K. Averill, of Bridgeport. William H. Barnum was elected president, David S. Draper, vice-president, and Charles K. Averill, secretary and treasurer.

The president and directors of the Louisville and Nashville Railroad Company were recently in Jacksonville, Florida, for the purpose of considering a plan for building a new railroad from Montgomery, Ala., to Chattahoochee, connecting the Louisville and Nashville system with the Florida Central and Western Transit Railroad, of which B. S. Henning is president, and C. D. Willard vice-president. The proposed new line would shorten the distance between Florida and the Northwest over 200 miles.

At the annual meeting of the stockholders of the Northern Central Railway Company, held in Baltimore on the 23d ult., the following directors were elected: George B. Roberts, Wistar Morris, Samuel C. Huey, John P. Green, Edmund Smith, George Small, B. F. Newcomer, S. M. Shoemaker, J. N. Hutchinson, Dell Nobilt, Harry Walters and Henry Gilbert. The directors elected George B. Roberts, president; Frank Thomson, vice-president, and Stephen A. White, secretary.

At a meeting of the directors of the Wheeling and Lake Erie Railroad Company, held at Toledo, Ohio, on the 21st ult., Oliver Garrison, St. Louis; W. J. Forrest, New York; J. W. Wigham, Huron, Ohio; J. G. Warwick, Massillon, Ohio, and N. H. Swayne, Jr., Toledo, were chosen to fill the vacancies in the board of directors. Oliver Garrison was elected president, and M. D. Woodford, vice-president and general manager.

At the annual meeting of the Mexican Guadalupe Mining Company, held in Philadelphia on the 26th ult., 142,885 shares of stock were voted for the following board of directors, elected to serve for the ensuing year: Casper S. Butcher, William Clayton, William D. Frishmuth, Robert England, A. C. McCurdy, B. Frishmuth and

J. A. Meehan. Casper S. Butcher was elected president, and A. C. McCurdy, secretary.

THE officers of the Boston and Lowell Railroad Company are: J. F. Crockett, superintendent of transportation and machinery; C. E. A. Bartlett, treasurer; J. S. Lincoln, general freight agent; B. F. Kendrick, general ticket agent; Myron Taylor, chief clerk; C. S. Mellen, superintendent. The joint business arrangement between this road and the Concord Railroad was terminated on the 28th ult.

At the annual meeting of the stockholders of the Lehigh Coal and Navigation, held in Philadelphia on the 27th ult., the following board of managers was elected: Joseph S. Harris, president; Francis C. Yarnell, vice-president; Edward W. Clark, Fisher Hazard, Charles Parrish, Charles Wheeler, George Whitner, John Liesenring, James M. Willcox, Edward Lewis, T. Charlton Henry, Samuel Dickson.

At the annual election of the Haddonfield, Marlton and Medford Railroad Company, held at Cooper's Point, N. J., on the 1st inst., the following directors were elected: William L. Elkins, D. M. Zimmerman, E. E. Read, W. C. Houston, Crawford Miller, C. J. Walton, Sr., Benjamin Cooper, E. B. Woolston, H. W. Willis, Ellwood Evans, J. J. Braddock and D. D. Griscom.

At the annual meeting of the Monson Railroad Company, held at Bangor, Me., on the 26th ult., the following directors were elected: John F. Kimball, Eli W. Hoyt, Geo. S. Cushing and Geo. A. Mathews of Lowell, Mass., and A. W. Chapin of Monson. There are fair prospects that work will commence on the line in the spring.

### INCORPORATION.

THE American Ship-Building Company filed articles of incorporation with the County Clerk of New York County on the 5th inst. The object is to build and repair vessels, to make and repair machinery for use in vessels, and any articles used in the equipment and outfit of vessels, and generally to manufacture machinery of all kinds for these purposes anywhere in the United States. The incorporators are Henry H. Gorringer, Cornelius Vanderbilt and J. Frederick Tams. The trustees for the first year are Henry H. Gorringer, Charles M. Fry, Henry C. Peddor, James A. Roosevelt, and J. Frederick Tams. The capital is to be \$250,000, divided into 2,500 shares. The company is to continue for fifty years, and will have its main office in New York.

APPLICATION was made at the State Department, Harrisburg, Penn., on the 23d ult., for a charter for the Clearfield and Jefferson Railroad Company, the line of which will run from a point in Clearfield county, on the western side of Clearfield Creek, near Witmer Run, at the terminus of the Bells Gap Railroad Company when completed; north-westward through Clearfield and Indiana counties to Punxsutawney, Jefferson county, a distance of thirty-two miles. The capital stock is \$1,000,000, and the directors are Charles Berwind, Aaron Fries, John Reilly, J. N. Dubarry, F. S. Lewis, J. H. Converse, Allison White.

THE directors of the Susquehanna and Allegheny Railroad Company, which was incorporated at Harrisburg, Penn., on the 27th ult., are: Walston H. Brown, Frederic H. Brown, Thos. F. Wentworth, Herbert P. Brown, of New York; E. G. Platt, Victor Guillon, Robert D. Maxwell, John Rodgers and Frank M. Rodgers, of Philadelphia. The new road is a link of the Rochester and Pittsburgh.

THE bill to incorporate the International Railroad and Steamship Company, which passed the Legislature of Florida on the 26th ult., has been signed by the Governor. Gen. Gordon, of Georgia, is the leading spirit of the enterprise, which is to build a trunk railroad down the backbone of the Peninsula to Key West. The company has a large land grant.

THE Red Rock Coal and Mining Company, of Des Moines, Iowa, has been incorporated with a capital of \$1,000,000. The stockholders are: Jay Gould, Solon Humphreys, Russell Sage, A. L. Hopkins, J. S. Polk, J. S. Runnells and F. M. Hubbell. The company has 4,500 acres of coal lands on the line of the Wabash Railway.

ARTICLES of incorporation have been filed in the office of the Secretary of State of Arkansas for the Osceola and Malden Short Line Railroad, with a capital stock of \$300,000. The line will extend from Osceola, Mississippi county, to Malden, Mo., a distance of sixty miles.

A CERTIFICATE of incorporation was filed with the Secretary of State of Ohio on the 1st inst., of the Cleveland, Lorain and Wheeling Railroad Company; capital, \$5,600,000. Principal office to be located at Lorain.

THE Texas Midland Railroad has been chartered, to run from Waco to Palestine.

### CONSTRUCTION.

It is announced that the Oregon Short Division of the Union Pacific Railway has been completed from Granger, Wyoming, to Shoshone, Idaho, a distance of 321 miles, and through trains will be run to that point. From Shoshone a branch is being built and will probably be completed by May 1 to Hailey, Idaho. First-class stages will run from Shoshone, or the end of the track of the Wood River Branch, to all points in the Wood River region. The Oregon Short Line Division is being rapidly pushed westward and connections are now made at the end of the track with the Utah, Idaho and Oregon stage line for Walla Walla, W. T., and intermediate points. The stages connect at Pendleton, Oregon, and Walla Walla, W. T., with the Oregon Railroad and Navigation Company's lines for Portland and other points in Oregon and Washington Territory.

THE work on the Canton, Aberdeen and Nashville Railroad is being pushed forward rapidly, and the contractors are confident that the line will be completed by November next. B. W. De Courcy, the chief engineer of the road, has made a trip on horseback over the line and reports that work is progressing in a very satisfactory manner. There are several large forces of men at work between Kosciusko and Starkville. The Illinois Central Railroad Company has just purchased 900 tons of steel rails for the road, the delivery of which will be commenced



at once, and preparations are being made for active track-laying.

THE survey of the New York, Lake Erie and Western Company's new route to the anthracite coal regions was completed recently. The new road will be known as the Erie and Wyoming Valley and will run from Hawley to Pittston, a distance of forty-six miles. Contracts for building the new road have been opened at the New York office and the management has determined to have the road in running condition by January 1, 1884. The Erie and Wyoming line will take the place of the Pennsylvania Coal Company's gravity road. The road opens direct coal traffic with Boston and other portions of New England.

It is stated that the work mapped out by the Chicago, Milwaukee and St. Paul Railroad Company to be commenced early this season, and which it considers as most important for it to build, is as follows: First, the building of the Defiance line to Sioux City; second, an extension of the line from Cedar Rapids to Kansas City via Sigourney and Ottumwa; third, the building of about sixty-five miles of line in the Jim Valley in Dakota, completing various branches now in operation.

THE survey of the Scioto Valley Railroad, of Ohio, which is about to extend its line northwest from Columbus to Fort Wayne, Ind., whence it will have an outlet to Chicago, has been completed, and the grading of the new branches is to be begun shortly. The Scioto Valley Railroad was opened in 1876, and was extended to opposite Ashland, Kentucky, forming a connection with the Chesapeake and Ohio Railway in 1881.

THE Tavares (Florida) *Herald* says that final arrangements have been perfected for pushing to immediate completion to Tavares the St. Johns and Lake Eustis Railway. The iron has been ordered and is on the way. There will be no stopping at Lake Eustis or any other point, but Tavares will be the terminus of the road until it takes another start toward the Gulf.

THE Cincinnati, Van Wert and Michigan Railroad Company have purchased the Paulding and Cecil Railroad, and propose to extend their road north to Bryan, on the Lake Shore and Michigan Southern Railway, and south to Eaton, on the Cincinnati, Hamilton and Dayton Railroad, this summer. The officers have established their headquarters in Van Wert.

THE Long Island Railroad Company will begin the work of grading for a double track between Flushing and Winfield in a few days. The old Long Island road has been relaid with new steel rails and the coming summer passenger trains will be run over this route as far as Jamaica.

THE charter of the International Railroad and Steamship Company, which passed both Houses of the Florida Legislature, and became a law, contemplates a Trunk Line from the Georgia Line to Key West. The road had a land grant of nearly 7,000,000 acres of State land.

THE subscriptions have been completed which secure the building of the Diagonal Railroad to Des Moines. The road, as projected, is to run from McGregor to Nebraska City, and

the track is to be laid from Marshalltown to Waterloo by June 1.

THE Yazoo *Sentinel* learns from Capt. Farrar, engineer of the Yazoo and Mississippi Valley Railroad, that the road will be completed to Yazoo City by October if reasonably fair weather is had up to that time.

TRACK-LAYING on the Northern Pacific Railroad has reached a point sixteen miles west of Livingston, which is 1,045 miles from St. Paul and within eight miles of Boseman, the third city in Montana.

A NUMBER of New York and Boston capitalists were in Ottawa on the 2d inst., negotiating with the Ontario Pacific Railway Co., for the construction of a line from Cornwall to Sault Ste. Marie.

THE track of the Dorchester and Delaware Railroad, which recently passed into the possession of the Pennsylvania Railroad Company, are to be laid at once and the line opened for travel.

THE Pensacola and Atlantic Railroad was opened for business on the 1st inst., and is running daily passenger trains from Pensacola direct to Tallahassee and Jacksonville, Fla.

ARRANGEMENTS have been made by the projectors of the Memphis, Selma and Brunswick Railroad, for the rapid extension of the line to Aberdeen, Miss.

THE grading on the Natchez, Red River and Texas road has been completed to Trinity, and everything is in readiness for track-laying.

THE narrow-gauge railroad between Texarkana and Camden, Ark., is completed with the exception of a gap of ten miles.

THE Georgia Pacific Railroad was completed to Anniston, Ala., on the 25th ult.

### PERSONAL.

THE management of the Charlotte, Columbia and Augusta and the Columbia and Greenville railroads and their branches has been consolidated under one administration. The following officers were elected: President, W. A. C. Haskell, of Columbia; assistant general manager, Peyton Randolph, of Richmond, Va.; auditor and secretary, John Craig, of Columbia; treasurer, John C. C. Smith, of Columbia. This consolidation embraces 486 miles of broad gauge and 85 miles of narrow gauge railroad.

THE Associated Railways of Virginia and the Carolinas have issued the following circular: Mr. Waldo A. Pearce, in addition to his duties as freight agent of these lines for New England, will also assume charge of our Boston Passenger Agency, No. 228 Washington street, Boston.

ISAAC D. BARTON, general superintendent of the Long Island Railroad, has been appointed superintendent of the New York, Woodhaven and Rockaway Beach Railroad. This places all the Long Island roads under one supervision.

THE officers of the Lake St. Francis Navigation Company are: Robert Bickerdike, president, Robert Cowan, vice-president, J. N. Beaudry, secretary and treasurer, and G. H. Philips, assistant secretary and treasurer.

J. C. RAUM has been appointed assistant engineer of the Hartford and Harlem Railroad.

He will have charge of the line from New Haven to New York, with headquarters at Norwalk, Conn.

THE Senate of Alabama has chosen W. L. Bragg, C. P. Ball and James Crook as Railroad Commissioners for the next two years. They comprise the present board.

THE Railroad Commissioners of Iowa are: James Wilson Traer, of Tama county; Peter A. Day, of Iowa City, and A. R. Anderson, of Sydney, Fremont county.

OLIVER GARRISON has been elected president, and M. D. Woodford vice-president and general manager of the Wheeling and Lake Erie Railway Company.

L. S. BROWN has accepted the position of general freight and passenger agent of the Georgia Pacific Railway Co., with headquarters at Atlanta.

THE Railroad and Warehouse Commissioners of Illinois, recently appointed by the Governor, are: W. N. Brainard, E. C. Lewis and C. T. Stratton.

JONAS H. FRENCH has been elected president and George F. Evans secretary and treasurer of the Louisville, Evansville and St. Louis Railroad Co.

W. H. FINLEY has been appointed general freight agent of the Texas and Pacific Railway Company, and will establish his office in New Orleans.

J. G. CASE has been appointed treasurer of the Bankers' and Merchants' Telegraph Company, vice J. Heron Crosman resigned.

WILLIAM P. ROBINSON has been appointed traffic manager of the New York, West Shore and Buffalo Railway Company.

CHARLES H. CORY has been appointed superintendent of the Boston, Hoosac Tunnel and Western Railway.

R. G. HANSON has received the appointment of general western agent of the Virginia Midland Railway Co.

J. A. DEW has accepted the position of Master of Transportation of the Chesapeake and Ohio Railway.

J. L. P. O'HANLEY, of Ottawa, has been appointed chief engineer of the Ontario and Pacific Railway.

FRANK E. BROWN has received the appointment of general passenger agent of the Concord Railroad.

P. D. FORD has been appointed supervisor of the New York division of the Pennsylvania Railroad.

E. D. FROST has been appointed superintendent of the Natchez, Jackson and Columbus Railroad.

ALBERT NETTER has been elected president of the Vincennes, Jasper and Ohio River Railroad.

SAMUEL BARRETT has been appointed general freight agent of the Concord Railroad.

CHAS. S. MELLEN has been appointed superintendent of the Boston and Lowell Railroad.

A SIGN-BOARD can't tell everything. It takes an advertisement to do that.

## Housatonic Railroad.

The earnings of the Housatonic Railroad for the years ending September 30, 1881 and 1882, were as follows:

	1881.	1882.
From passengers.....	\$217,215.96	\$230,282.98
From freight.....	470,756.69	446,956.13
From milk.....	41,260.75	40,335.92
From express.....	12,750.00	15,000.00
From mails.....	11,110.20	12,356.57
From wharfage.....	1,419.50	1,396.16
	\$754,513.10	\$746,327.77
Expenses, viz:		
Repairs of road.....	\$ 63,760.77	\$ 59,753.17
Repairs of engines.....	28,121.16	34,011.75
Repairs of cars.....	37,855.11	41,656.99
Repairs of bridges.....	14,033.37	3,417.35
Repairs of buildings, etc.....	17,560.34	20,356.47
Renewal of ties.....	18,960.06	22,830.02
Steel rails.....	52,303.97	59,999.20
Fuel for locomotives.....	60,270.14	59,969.69
Oil and waste.....	6,342.72	6,312.26
Locomotive service.....	31,731.53	33,845.25
Passenger train service.....	12,518.79	11,287.85
Freight train service.....	20,293.44	22,597.10
Loss and damage.....	1,917.99	1,098.03
Agents and station service.....	40,650.34	47,429.34
Salaries general officers and clerks.....	17,998.46	19,653.19
Mileage of cars.....	4,501.50	2,428.76
Improvements at Bridgeport passenger depot.....	7,514.37	.....
Expenses N. Y., Hous. and Nor. R. R.....	5,405.75	.....
New passenger depot Housatonic.....	.....	7,970.01
All other expenses.....	38,791.31	38,538.23
	\$480,531.12	\$493,124.66
Net earnings.....	\$273,981.98	\$253,203.10
From which deduct—		
State and other taxes.....	\$ 10,980.00	\$ 12,447.71
Rent Stockbridge and Pittsfield R. R.....	31,409.00	31,409.00
Rent Berkshire R. R.....	42,000.00	42,000.00
Rent West Stockbridge R. R.....	698.59	666.92
Rent N. Y., Hous. and Nor. R. R.....	4,725.86	.....
Interest.....	21,630.95	9,801.97
Coupon interest.....	35,500.00	59,550.00
Miscellaneous.....	22.58	.....
	\$146,966.98	\$155,875.60
Net gain after deducting all expenses.....	\$127,015.00	\$97,327.50
Dividends of two per cent each were paid in January, April, July and October on \$1,180,000 of preferred stock, amounting to.....	94,400.00	94,400.00
Leaving a balance of.....	\$ 32,615.00	\$ 2,927.50
Add balance from previous year.....	187,898.23	220,515.23
Balance at credit of profit and loss Sept. 30.....	\$220,513.23	\$223,440.73

During the fiscal year ending September 30, 1881, the company purchased that portion of the New York, Housatonic and Northern Railroad between Brookfield Junction to and including the terminal facilities at Danbury for \$65,000; paid for and laid 1,438½ tons of steel rails, costing, @ \$50, \$71,925; built twenty-five new platform cars for \$11,875; built at Amesville two dwelling houses, costing \$2,500; made improvements at Bridgeport passenger depot, and charged in operating expenses, \$7,514.37—a total extraordinary but necessary expense during that year of \$158,814.37.

During the fiscal year ending September 30, 1882, there were issued \$200,000 five per cent Rolling-Stock Certificates, the proceeds of which were invested in 350 Fast Freight Line cars and 50 coal cars. There were also purchased 1,220 tons of steel rails, and a contract made for 2,500 tons for May and June delivery, at \$40 per ton, which when laid will give a continuous steel rail track from Bridgeport to Pittsfield. Three locomotives were purchased during the year at a cost of \$42,041.54, and one locomotive sold for \$3,280. Land has also been purchased and new freight and passenger depots built, and increased siding laid at Housatonic, costing \$21,305.13.

The report states that the general condition

of the property is first-class, and will be found for the first time fully capable of meeting economically any freight and passenger demands made upon it.

The equipment of the road consists of 24 locomotives, 26 eight-wheel and 1 four-wheel passenger cars, 9 eight-wheel and 3 four-wheel mail and smoking cars, and 533 box, 329 flat, 14 hay, 1 wrecking, and 3 caboose cars, the total valuation of which is \$722,550. Last year the company had 22 locomotives, 36 passenger and baggage cars and 537 freight, etc. cars, the total valuation of which was \$488,000.

The number of miles run by locomotives in 1882 was 539,470, against 544,810 in 1881; the number of passengers carried in 1882 was 340,478 against 319,743 in 1881; the number of passengers carried one mile in 1882 was 8,546,740, against 7,846,894 in 1881; tons of freight carried in 1882, 353,909; in 1881, 348,614; tons of freight carried one mile in 1882, 17,510,670; in 1881, 17,277,336.

## CONDENSED BALANCE SHEET, SEPT. 30,

	1881.	1882.
Railroad and equipment.....	\$2,205,558.52	\$2,205,558.52
Permanent improvements and additions.....	489,932.26	560,240.03
New York, Housatonic and Northern Railroad.....	66,652.09	65,000.00
The Ames property.....	170,889.69	170,889.69
Real estate.....	30,243.04	33,343.44
Stockbridge and Pittsfield Railroad.....	5,992.76	5,992.76
Cash on hand and in banks.....	133,390.54	105,824.39
Accounts receivable.....	72,217.16	77,396.76
Bills receivable.....	1,298.93	726.13
Rolling-stock cars.....	.....	215,793.47
Due from stations.....	38,884.53	39,029.09
Wood lots.....	987.99	987.99
Materials on hand.....	67,069.35	75,627.76
Totals.....	\$3,276,116.86	\$3,556,310.03
Capital stock, old.....	\$ 820,000.00	\$ 820,000.00
" " preferred.....	1,180,000.00	1,180,000.00
Bonds due in 1883—7 per cent.....	150,000.00	150,000.00
" " 1885—7 per cent.....	100,000.00	100,000.00
" " 1889—6 per cent.....	300,000.00	300,000.00
" " 1910—5 per cent.....	300,000.00	300,000.00
Rolling-stock certificates, due in 1889—5 per cent.....	.....	200,000.00
September expenses.....	38,597.25	41,085.55
Rent of Stockbridge and Pittsfield Railroad.....	7,852.25	7,852.25
Rent of Berkshire Railroad.....	3,500.00	3,500.00
Rent of West Stockbridge Railroad.....	50.00	50.00
Book accounts.....	5,951.14	12,987.64
Rolling stock earnings.....	.....	11,756.50
Unclaimed dividends.....	108.00	108.00
Coupon and registered interest.....	14,544.99	17,529.99
Bills payable.....	135,000.00	188,008.37
Profit and loss.....	220,513.23	223,440.73
Totals, as above.....	\$3,276,116.86	\$3,556,310.03

President.—WILLIAM H. BARNUM.

Vice-President.—DAVID S. DRAPER.

Directors.—Wm. H. Barnum, Lime Rock, Conn.; Samuel Willits, Edward Leavitt, New York; A. B. Mygott, New Milford, Conn.; Horace Nichols, Wm. D. Bishop, Bridgeport, Conn.; David S. Draper, John B. Peck, New York; Charles K. Averill, Bridgeport, Conn.

Sec. and Treasurer.—CHARLES K. AVERILL.

Superintendent.—W. H. YEOMANS.

## Boston and Washington Through Trains Resumed.

It is officially announced by the passenger department of the Pennsylvania Railroad Company that train service between Boston and Washington (via "New York and New England Railroad," "New York, New Haven and Hartford Railroad," "transfer steamer Maryland," and "Pennsylvania Route"), with through passenger cars and Pullman sleepers, has been re-

established. The Maryland has been thoroughly overhauled—in fact, almost rebuilt—and the facilities for through service by this route made more perfect than ever before. Southward the train will leave Boston every evening at 7 o'clock, arrive at Philadelphia 6.50 A. M., Baltimore at 9.45 A. M., and Washington at 11.10 A. M. Northward—Leave Washington on week days at 1.30 P. M., and on Sundays at 4.20 P. M. Baltimore on week days at 3 P. M., and on Sundays at 5.40 P. M. Philadelphia every day at 6.30 P. M., and arrive at Boston at 7.55 A. M. Pullman sleeping car will be run between Boston and Washington, and there will also be a Pullman sleeper between Boston and Philadelphia.

## Railroads in Florida.

Two new railroads have just been chartered in Florida, to be built at an early day. One of them, according to the *Florida State Journal*, is to run from New Bradford, on the Suwannee River, to Dead Man's Bay. At New Bradford it will connect with the Live Oak road and through it with the great Georgia system of railroads, and thus give a direct route from the Gulf to Cincinnati and all points North, saving miles of travel and countless dollars of freight. Its value to the State cannot be estimated. The other road is no less important. It will run from Anclote River across to Indiana River inlet, thus traversing and opening up to the world the finest sections of Florida, and giving immediate and direct egress to the market of the immense crops of oranges and other fruits in that section. Then it will also supply a long felt want in getting the necessary breadstuffs and merchants' supplies for South Florida. It also traverses the whole Peninsular of Florida, joining the Gulf and the Atlantic. These two roads will add greatly to the wealth of the State, besides their great influence in setting up and increasing educational facilities. The directors are well known, and backed by some of the strongest and best known capitalists and railroad men on the continent, and are determined to push these roads through without delay.

## McLeod Air Railroad Signal.

At a special meeting of the stockholders of the McLeod Air Railroad Signal Company, held at Hartford, Conn., February 24, 1883, it was reported that great improvements have been accomplished in simplifying and perfecting the McLeod System of "Crossing" and "Block" system of signals, and that they are ready for main track use as soon as provision is made for their manufacture, and that many orders have already been received for them from railroads in different parts of the country.

Numerous letters from railroad officials, who have personally examined this system, show that it meets their high approval, and that its universal adoption seems beyond any doubt.

It was then stated that \$260,000 of the capital stock remained in the treasury for working expense; and the directors were authorized to sell sufficient of it to raise the money neces-



sary to complete the works of the company at Boston, and to make such further arrangements as they may deem best for the manufacture and introduction of the signals as early as possible. Thirty-seven stockholders were represented at the meeting, and the feeling and outlook for a large business in the near future seemed very good.

### Southern Pacific Railroad.

At a meeting of the Railroad Commissioners in San Francisco, on the 12th ult., Mr. A. N. Towne, of the Central Pacific Railroad, presented a communication on the subject of the construction of railroads in California, giving statistics and data concerning the construction of the Southern Pacific Railroad on the Sunset route to New Orleans, showing the present assessment rolls of the districts through which the road passes, and what they were in 1870—showing an increase of 300 per cent.

Mr. Towne invited the Commissioners to make searching inquiries into the workings of the railroad, stating that the acts of both companies would be found just to all. Reductions had been made from year to year, and millions of dollars had been saved to farmers. It was shown from the balance sheet that the aggregate dividends of all roads, if applied to the capital employed, would amount to but a fraction over two per cent.

The balance sheet filed for the year 1882 shows the gross earnings to have been \$25,662,757.12; earnings of the steamer division, \$20,485.29; interest on sinking fund, \$281,260. Total, \$25,964,502.41. Expenditures—Operating expenses, \$16,067,183.68; general expenses, \$330,646.72; legal expenses, \$246,751.41; civil engineering, \$1,547,965; taxes, \$448,005.69; expenses of the land department, \$2,370,078; interest, \$3,443,413.32; company's sinking fund and interest paid to the United States, \$1,100,000. Total expenditures, \$22,679,940.24. Surplus for the year from all sources available for dividends, \$3,284,562.17. The length of road reported is 3,201 miles.

### Elevated Railway in Vienna.

THE Vienna Metropolitan Railway, for which the Emperor has granted the concession to an English company, will, according to a correspondent of the *London Standard*, be an elevated line on the model of the city railways of Berlin and New York. The English contractors, who have already deposited the required security of 1,000,000 florins, undertake to find the necessary capital of 60,000,000 florins, or upward of £5,000,000, within six months. A joint company is to be formed, with two boards of directors, one being Austrian and one English, and with Vienna as their headquarters. Only half the capital is to consist of shares, the rest being raised by debentures.

The iron and other materials to be used in the construction, it is agreed, shall be furnished by Austrian manufacturers exclusively, and all the officials, except those at the head of the company are to be Austrians. The iron required for the construction of the pillars, viaducts, and rails is estimated at about 60,000

tons, and will cost over 12,000,000 florins. The engines are to be worked not by steam, but either by hot water, compressed air, or electricity, in order to prevent smoke. The railway will necessitate the construction of a few bridges over the Wien River and one small tunnel under it, but no other costly or difficult work appears necessary. The whole length will be 14,773 kilometres, of which 8,786 kilometres will run on iron viaducts, 0.449 kilometres through the tunnel, and the rest on canal or river banks or through the excavations. The velocity will be 30 kilometres an hour, and the whole line, including 19 stations, will be traversed in 38 minutes. Every five minutes a train is to start, traveling round the entire circle in both directions. Cheap "workmen's trains" will leave early in the morning and late in the evening. The whole line must be placed at the disposal of the military authorities in case of war for the through transport of troops and material from one terminus to another. The impetus which will be given to Vienna when this railway is completed will be enormous. No city in Europe possesses such lovely suburbs or such a beautiful country in its immediate neighborhood as Vienna. I need only mention the Wiener Wald, from the Kahlenberg to Hinterbrühl, Modling, Baden, and Voslau, on the road to the Semmering and Styrian Alps. According to the plan adopted there will be a central station erected on the "Franz Josef's Quay" along the Danube Canal, which divides the populous quarter called Leopoldstadt from the city proper and from new Vienna. This central station will be two or three minutes from the Bourse on the Schotten Ring, about four minutes' walk from many of our most splendid new buildings, like the Parliament-house, the University, the splendid new Town Hall, the new Palace of Justice, the new Burg Theatre, and the new Imperial Museums. The only fault to be found with the projected elevated railway is that it will follow the River Wien, which cuts Vienna into two very irregular and unequal parts. The consequence will be that we shall have no inner circle after the London fashion, but only an outer circle.

### New Iron Bridge over the Yazoo River.

THE Memphis, Vicksburg, and New Orleans, or what is better known as the Wilson line of railroads, is now building quite a large iron bridge over the Yazoo River, some 12 miles above Vicksburg, Miss. The construction of the piers for the bridge has been vigorously prosecuted for some time past. The point selected is unusually difficult and expensive for the construction of a bridge, as there is no bed rock or other material within reach for the foundations to rest upon, and the river, even at low water, is nearly 40 feet deep.

The bridge, as described by the Henderson (Ky.) *News*, will consist of three spans about 300 feet long each, two of them fixed spans, and the third, a draw span, located in the middle of the channel. These will be some six feet above the level of extreme high water, and slightly above the elevation of the banks on either side. There will be five piers, one at each end on the bank and three in the river.

To obtain the requisite supporting capacity, piles—100 in the pivot and 72 in each of the other two channel piers—are driven to a depth of forty feet into the river bottom. The outfit to drive these piles consists of a regular pile driver engine, with a 4,000 pound hammer, a Skinner steam hammer weighing 7,000 pounds, and a duplex Worthington pump to supply a water jet, when this can be used in place of driving, or to assist the latter. When the jet can be used to advantage, pipes are so arranged that one or more powerful jets are brought into play at the point of the pile, excavating a hole for the latter to sink into. The caisson for the first pier is fifty feet in diameter, with sides two feet thick and six feet high; the roof consists of solid timber and is seven feet thick. The piers, when complete, will consist of piles sawed off level with the bottom of the river. Surrounding these is a solid platform (the roof of the caisson) of timber seven feet thick, on which will rest the piers proper, which will be one continuous mass of concrete. The cost of the entire structure is estimated at from \$225,000 to \$250,000.

### Production of Iron and Steel Rails.

THE Secretary of the American Iron and Steel Association reports that returns have been received from all the mills that rolled iron and steel railway bars in 1882. These reports show that the total production of iron and steel rails in this country last year was 1,688,794 net tons, a falling off, as compared with 1881, of 156,306 net tons, which is equivalent to a decrease of 8 per cent. There was a decrease in every State but six—Vermont, Massachusetts, Missouri, Colorado, Wyoming and California. No rails were made during the year in New Jersey, Virginia and Georgia.

The following shows the production of the various kinds of rails in 1882, as compared with 1881 in net tons: Bessemer steel rails, 1881, 1,330,302 tons; in 1882, 1,438,155 tons; iron rails, 1881, 488,581 tons; in 1882, 227,874 tons; open hearth steel rails, 1881, 25,217 tons; in 1882, 22,765 tons. This shows that the quantity of Bessemer steel rails made in 1882 exceeded the quantity made in 1881, while the production of iron rails fell off heavily and that of open hearth steel rails fell off slightly.

The five leading rail-making States are Pennsylvania, Illinois, Ohio, New York and Missouri. Of the 1,517,513 tons of rails produced by these States in 1882, Pennsylvania produced 850,908 tons; Illinois, 362,250 tons; Ohio, 113,806 tons; New York, 155,021 tons; and Missouri, 85,528 tons.

### Fast Time.

"ONE of the fastest trips I ever made over the Lake Shore Railroad," said an old engineer the other day, "was when I yanked Commodore Vanderbilt from Erie to Cleveland in an hour and thirty minutes. That was on the 1st or 2d of May, 1876, the day before the stockholders' meeting. The special had been delayed all the way from New York to Buffalo by the immense travel over the road incidental to the Centennial Exhibition. When I backed up to the car at Erie, my orders were to 'let her out,' and I

did. From Erie to Girard, Penn., the track was heavy, and it took us eighteen minutes to make the fifteen miles. That would never do. The fireman braced up the fire and I pulled her open. Well, now, we fairly flew. You see we had to make four stops, once for water and three times at targets. When you come to take out of ninety-nine minutes, the actual time consumed in the whole trip, the time occupied in four stops and the time lost in going from Erie to Girard, you can see that some lively time had to be made somewhere. The distance is ninety-five and a half miles, and we must have made the last eighty of them in just eighty minutes and stopped four times. I guess that's a little the liveliest traveling the old man ever got."

### Weekly News Items.

THE new dock at Cardiff, Wales, of which the Marquis of Bute recently cut the first sod, will extend over thirty-five acres, exclusive of timber ponds, and will cost about £600,000. It is to be completed within three years. The lock will be the largest in the world, its dimensions being 80 feet wide and 600 feet long, while the depth of water over the sills will vary from 26 feet to 30 feet. The dock will be 2,400 feet long and 600 feet wide, the depth of water varying between 25 feet and 33 feet, according to tide. There will be timber ponds covering eighteen acres adjoining. All the railway arrangements and the loading and discharging of machinery will be of the most complete description. When the new dock is complete there will be a water area in Cardiff basins and docks of 130 acres, and a quayage of five miles.

A CURIOUS advertisement has lately been inserted in a Paris paper, wherein a certain "Yankee Engineer" thus addresses all "whom it may concern":—"Having visited the Leaning Tower at Pisa, Italy, I am fully convinced that the architectural grandeur and beauty of this ancient and colossal relic of past ages can be wonderfully improved. I hereby offer to contract to put this immense structure in a perpendicular position and raise it to a level of the ground for the sum of \$600,000, the terms of payment and time of completion to be agreed upon, the time not to exceed ninety days."

THERE is now being made at the Thompson & Williams foundry, in Stratford, Canada, a fly wheel or pulley of enormous size. It is part of the immense engine which the company is building for a cotton mill in the Maritime Provinces. The diameter of the wheel is twenty-four feet; its width is five feet two inches, and weight about twenty-six tons. The rim was cast in six segments, and the hub in two parts.

In the suit brought in the United States Court at Indianapolis, Ind., by James G. Tyner, et al., against the Wabash, St. Louis and Pacific Railway Company, to recover on some Equipment bonds issued by the Toledo and Western Railroad Company, amounting to \$600,000, with interest since 1862, the Court held that the defendant company was liable.

A MOVEMENT is on foot in Montreal to establish a line of steamers between that port and Mexico.

## CORRESPONDENCE.

[COMMUNICATIONS are solicited for this department on all subjects pertaining to Railroads, Steam Navigation, Machinery, Manufactures, etc. No attention will be paid to communications unless the name and address of the writer is furnished us, though if desired, they will be withheld from publication. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to this department of the AMERICAN RAILROAD JOURNAL.]

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

#### THE CANADIAN PACIFIC—GOVERNMENT RAILWAYS—RAILROAD AND OTHER NOTES.

The Honorable Minister of Railways and Canals, Sir Charles Tupper, laid before the House the annual report of his department for the past fiscal year from July 1, 1881, to June 30, 1882. The present report deals with the undermentioned railways of the Dominion, either directly controlled by the Federal Government or towards the construction of which subsidies have been granted or authorized.

*Controlled:* The Intercolonial, the Prince Edward Island.

*Subsidized or with subsidy authorized:* The Canadian Pacific, the Canada Central (Pembroke to Callander), Gravenhurst to Callander, St. Raymond to Lake John, Riviere Ouelle to Edmundston, the Great American and European Short Line, the Chignecto Marine Transport Railway.

#### THE CANADIAN PACIFIC RAILWAY.

Under the terms of the contract entered into in 1881 with the Canadian Pacific Railway Company, the government have undertaken to construct the line between Prince Arthur's Landing, on Lake Superior, and Red River; and between Savona's Ferry, at the foot of Lake Kamloops, and Port Moody, in British Columbia; and the company, on their part, have undertaken to construct, within a specified time, line between Callander Station, their eastern terminus at the east end of Lake Nipissing, and Prince Arthur's Landing; also between Red River and Savona's Ferry; the whole line to be the property of the company, and to be maintained and operated by said company.

*Trunk Line:*—

The following distances are calculated on a route running through the city of Winnipeg, and by the Kicking Horse Pass, if approved:—

1. From Callander (120 miles west from Pembroke) to Prince Arthur's Landing, an estimated distance of.....	650
2. From Prince Arthur's Landing to Winnipeg.....	433
3. From Winnipeg, via Kicking Horse Pass, to Savona's Ferry (at the foot of Kamloops Lake) an estimated distance of.....	1,259
4. From Savona's Ferry to Port Moody.....	215

Approximate length of the trunk line between Callander and Port Moody on the Pacific..... 2,557.

In addition to the line of the Canada Central Railway between Ottawa and Callander, a distance of 228 miles, which was acquired last year by the Canadian Pacific Railway, they have now purchased and operate the portion of the line

of the Quebec, Montreal, Ottawa and Occidental Railway between Ottawa and Montreal, a distance of 119 miles; being an addition of 347 miles incorporated into their main line system, making the total approximate distance between Montreal and Port Moody, 2,904 miles.

The section of road, 120 miles, between Pembroke and Callander for the construction of which the Canada Central Railway was subsidized by the Government to the extent of \$12,000 a mile, is nearly completed. The road for ninety-four miles between Pembroke and Mattawa is under traffic, and the remainder is in use for the transport of materials and supplies for the construction of the line west from Callander.

The branch line from Emerson to Winnipeg, sixty-five miles, and the main line from Winnipeg eastward to Tilford, ninety-four miles, having been transferred to the company, the portions to be completed by the government at the beginning of the fiscal year 1881-82 were: From Prince Arthur's Landing to Telford, 339 miles; from Savona's Ferry to Port Moody, 215 miles. On the 12th January, 1882, a subsection of forty miles of road between Telford and a point near Rat Portage was transferred to the company. Of the works in British Columbia, between Savona's Ferry and Port Moody, 215 miles; between Port Moody and Emory's Bar, eighty-five and a half miles is being vigorously prosecuted. The works going on under contract by the company are: From Callander to Prince Arthur's Landing, an estimated distance of 650 miles; from Winnipeg to Savona's Ferry, an estimated distance of 1,259 miles.

The location of the line up to the South Saskatchewan River, a distance of about 660 miles from Winnipeg, has received approval, and on this distance the company have now, up to the end of January, 1883, completed 581 miles of road.

In October last the opening of the line for traffic up to Regina, a distance, according to the published time tables of the company, of 356 miles, was authorized.

The government railways in operation are: The Intercolonial, 840 miles; Prince Edward Island, 199 miles; Windsor Branch (maintained only), thirty-two miles.

The Intercolonial and Windsor Branch being worked at a profit respectively of \$9,605 and \$7,953. The Prince Edward Railway, owing to increased expenditures in buildings and side tracks, cost \$90,992—in addition to receipts for these improvements. The successful manner in which the government railways are carried on reflects great credit on the management of Collingwood Schrieber, Esq., engineer-in-chief of government railways.

#### RAILWAY NOTES.

The New Brunswick Railway Company have petitioned the government for leave to increase the capital stock, and to ratify the list of certain lines of railway made by the New Brunswick and Canada Railway Co.

The Great Eastern Railroad Co. officials state that there are clerical errors in the charter as follows: The stock of the company is stated as \$1,000,000 instead of \$6,000,000, and the fourth and last clause contradict each other. They ask to have the act corrected.



Mr. Mullock's Bill to amend the consolidated Railway Act of 1879 was referred to the Committee on Railways and Telegraph Lines. Under the Railway Act of 1879, railways could, *without consulting other than their own interests*, make pooling arrangements for 21 years. The Hamilton and Northwestern Railway started as an independent line and bonused as an independent line by the villages, as soon as they were in working operation pooled with the Northern Railway for twenty-one years, thereby defeating the very object of the people who had voted the subsidy. By Mr. Mullock's bill, amalgamation could only take place by consent of the Governor-in-Council.

It is reported that the Grand Trunk Railway have secured a controlling interest in the Hamilton and Northwestern Railway, and that they will soon have the Northern Railroad, and assume control of the Toronto, Grey and Bruce.

The Ontario and Pacific Railway have opened offices here, and will shortly begin the survey of the line.

The Grand Trunk Railway have, it is said, secured the controlling interest in the St. Lawrence and Ottawa Railway which will give them two entrances into Ottawa.

A bill to incorporate the Dominion Railway Trust and Construction Company, has passed a second reading. The capital stock is one million dollars. The company will have power to lease and work railways, elevators and telegraph lines, charter boats, etc., construct and equip railways, etc., and to assist contractors etc.

It is claimed by the Railway Companies that the Railway Commissioner's bill, if passed, will do great damage to the country, and railway companies, that foreign capital will seek investment elsewhere, and that in a new country like Canada every encouragement should be given to investors and to railways which build it up and make it prosperous. Certainly the arguments advanced by the railway companies and their friends have great weight, and will probably defeat the bill.

It is said the government will subsidize a direct steamship line to Mexico, and \$50,000 have been placed in the estimates for that purpose.

Petitions have been sent in to Parliament asking for the admission free of duty of all scientific works in foreign languages, all scientific periodicals and all transactions of scientific societies.

Commissioner A. H. Blakely, appointed to inquire into and report on the operation of the laws regulating labor in the State of Massachusetts, has handed in his report. He approves of the Massachusetts system, generally, but thinks the law defective inasmuch as Inspectors are not given power to examine persons in a mill, with reference to any cause of complaint which may have reached them. The Commissioner was struck with the large number of French Canadians in the mill districts of the Eastern States, and says: "They all seek employment in the mills, and were there sufficient employment of this kind in the Dominion it is certain that many of them would gladly come back, as they invariably cherish a wish to return to their own land at some future time."

OTTAWA, March 8, 1883.

E. W. Vanderbilt.

E. M. Hopkins.

## VANDERBILT & HOPKINS, RAILROAD TIES, CAR AND RAILROAD LUMBER, White and Yellow Pine, Oak, Gum and Cypress Cut to Order, 120 LIBERTY ST., NEW YORK.

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The only Line running Pullman Palace cars between  
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## THE NORWICH LINE —BETWEEN— BOSTON AND NEW YORK.

Steamboat train leaves Boston 6:30 P. M. arrives at  
New London at 10:00 P. M., connecting with the new  
steamer **City of Worcester**, Monday, Wednes-  
days and Fridays, and **City of New York**, Tues-  
days, Thursdays and Saturdays. Returning, steamer  
leaves Pier 40, North River, New York, at 4:30 P. M.,  
connecting at New London with train leaving at 4:05  
A. M., arriving in Boston at 8:00 A. M. Good night's rest  
on the boat.

Ask for Tickets via N. Y. & N. E. R. R.  
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M. FELTON, JR., A. C. KENDALL,  
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Are used to call attention to the fact that this is an ad-  
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Bluffs**, as well as innumerable other principal busi-  
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Pullman Sleeping Car attached, running through to Cincinnati without change. (Only Line running Pullman Cars from Boston.) This car runs *via* Erie Railway and N.Y., P. & O. R.R., making direct connection for Louisville, St. Louis, Kansas City, New Orleans, and all points in Texas and New Mexico.

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The only line running a through sleeping-car *via* Niagara Falls, Canada Southern Railway and Detroit without change, arriving at Chicago at 8.00 A.M. second morning, making sure connections with through Express Trains for Iowa, Nebraska, Kansas, Colorado, the Pacific Coast, Wisconsin, Minnesota and all points in the

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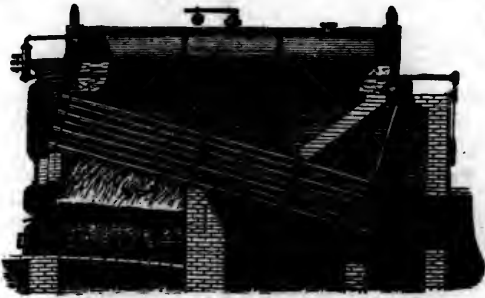
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In effect October 23d, 1882, and subject to changes.



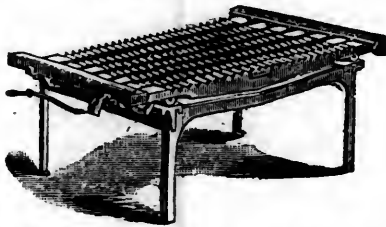
## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., OGDEN RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	227,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,276	224,921	261,439	300,155	278,439	246,062	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,744,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,022	203,562	2,702,762
1882.....	210,455	209,708	208,981	207,454	255,939	260,753	300,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	963,204	1,240,664	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,157,149	1,418,149	1,079,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	24,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,270,444	2,270,444	2,199,432	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,569,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,502	336,202	385,586	373,370	370,029	392,921	432,615	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,796	3,973,052
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,180
1881.....	182,523	171,511	191,005	183,710	191,056	192,299	177,161	229,858	228,653	221,320	211,014	195,809	2,296,910
1882.....	200,042	186,879	188,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,53
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,707	542,430	548,284	606,193	589,287	638,432	547,055	624,728	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	626,728	6,349,857
<b>MAINTAIN AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,973	195,607	180,376	2,230,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,503	249,252	239,891	2,203,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,780	604,493	673,259	803,887	720,004	868,407	828,447	815,238	737,218	763,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	102,085	90,677	80,064	109,840	199,125	247,114	225,678	225,678	200,450	192,622	1,478,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,13	206,072	278,814	273,100	269,046	256,998	205,212	2,641,675
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	1,017,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,313	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,368	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	252,986	258,212	2,403,224
1882.....	159,676	158,590	148,166	141,957	134,378	136,184	135,174	137,475	157,874	267,433	295,110	307,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	197,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	261,082	3,468,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	240,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,551,835	1,398,282	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,809,910	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	380,157	382,657	452,906	487,273	455,888	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	509,663	467,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,390	77,259	119,357	185,700	217,613	253,105	241,277	263,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,984	216,210	312,705	412,024	393,260	434,085	534,363	583,955	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,231								

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By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop its working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.

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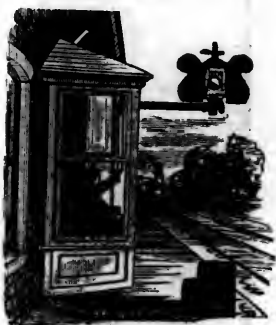


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## RAILROAD, TRAMWAY AND CANAL DIVIDEND STATEMENT

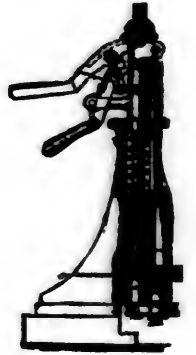
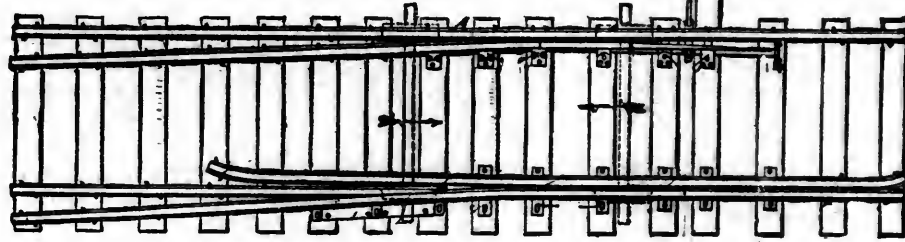
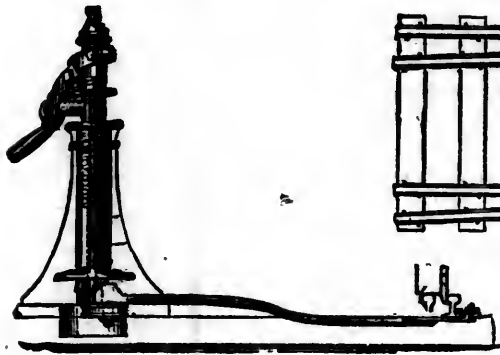
Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*)are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,000,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Dec. '82 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Feio	4 00,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S.100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Pointro	1 32 200	semi-an	Aug. '82 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*10	840,000	semi-an	Sept. '82 3	Long Island..... 100	10,259,020	q'arterly	Feb. '83 1	Westchest&Phil.pref100	821,300	semi-an.	July '80 2
Augusta and Savan*100	225,000	semi-an	Dec. '82 3 1/2	Louisville & Nashv.100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Avon, Genesee&MtM*10	225,000	semi-an	Jan. '82 3	Lowell & Andover...100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington&Weld'n.100	1,456,200	semi-an.	Jan. '82 3
Baltimore and Ohio.....100	1,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Jan. '82 2 1/2	Wil., Col., & Aug.....100	960,000	semi-an.	Jan. '83 3
" " pref.100	5,000,000	semi-an	Jan. '83 3	Maine Central.....100	3,603,300	semi-an.	Feb. '83 2 1/2	Winchester&Poto'c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manchester & Law... 00	1,000,000	semi-an.	Nov. '82 5	Winchester&Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	Manhattan.....100	13,000,000	.....	.....	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 1	" " 1st pref.100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos.&N.Y.AirLine pf.100	2,795,227	q'arterly	June '82 1	" " 2d pref.100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos., Cl. F. & N. B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	Marq. Hout. & Ont.....100	2,306,600	.....	Feb. '83 4				
Bos., Cl. F. & N. B. pref.100	800,000	semi-an	Nov. '82 3	" " pref.100	2,259,026	semi-an.	Feb. '83 4				
Boston and Lowell.....5	3,940,000	semi-an	Jan. '83 2 1/2	Massawippi*.....100	400,000	semi-an.	Feb. '83 3	Albany City.....100	200,000	annual	.....'80 5 1/2
Boston and Maine.....1	6,921,274	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Boston & Providence	4,000,000	semi-an	Nov. '82 4	Michigan Central.....100	18,738,204	.....	Feb. '83 2	Balt., Cat. & El. Mills.100	80,000	semi-an.	Jan. '83 2 1/2
Attleborough Br.....1	131,700	semi-an	Jan. '83 3 1/2	Middlesex Central... 100	280,000	semi-an.	Feb. '83 3	Bleeker St. & Ful. F'y.100	900,000	semi-an.	July '82 1/2
Bos., Revere B. & Lynn	419,400	semi-an	Jan. '83 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Buffalo, N. Y. & Erie*1	950,000	semi-an	Dec. '82 3	M. Hill & Schuyl. Hay* 50	4,022,500	semi-an.	Jan. '83 3 1/2	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
Buff., Pitts. & West. pf. 50	1,457,000	.....	Jan. '83 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2	B'way & 7th Av. (N.Y.)100	2,100,000	q'arterly	Oct. '82 2
Camden & Atlantic.....50	377,400	q'arterly	Nov. '82 3	Mobile & Montgomery100	3,022,517	semi-an.	Feb. '80 2 1/2	B'klyn & Hunter's Pt.100	400,000	semi-an.	Oct. '82 6
" " pref.100	880,650	q'arterly	Nov. '82 4	Morris and Essex.... 50	15,000,000	semi-an.	Jan. '83 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Camden & Burl. Co.....100	381,925	semi-an	Jan. '83 3	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6	Bushwick (Brooklyn)100	309,000	semi-an.	Oct. '82 6
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Nashua and Lowell...100	800,000	semi-an.	Nov. '82 4	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua & Rochester.100	1,305,800	semi-an.	Oct. '82 1 1/2	Cen. Park, N. & E. Riv.100	1,800,000	q'arterly	Oct. '82 6
Catawissa*.....50	1,159,500	annual	Oct. '82 2 1/2	Nashv. & Decatur...100	1,827,000	semi-an.	June '82 3	Christoph'r & Tenth St.100	650,000	semi-an.	Aug. '82 2 1/2
" " new pref.100	2,000,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2	Citizens' (Phil.)..... 50	192,500	q'arterly	Jan. '82 2 1/2
Cayuga and Susq*.....100	589,110	semi-an	Jan. '83 4 1/2	Naugatuck.....100	7,950,000	semi-an.	Jan. '83 5	Citizens' (Phg.)..... 50	200,000	annual	.....'80 1 1/2
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Feb. '83 1 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Sept. '82 3	Coney Island & Bklyn100	500,000	semi-an.	Oct. '80 5
" " pref.100	769,600	semi-an	Feb. '83 3 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Oct. '82 1	Continental (Phil.)... 50	580,000	semi-an.	Jan. '83 6
Central of Georgia.....100	7,500,000	semi-an	Dec. '82 4	New London North'n*100	1,500,000	q'arterly	Jan. '83 1 1/2	D. Dock, E. B'way & Batro100	1,200,000	q'arterly	Aug. '82 4
Central of New Jersey100	18,563,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R.100	89,428,330	q'arterly	Jan. '83 2	Eighth Av. (N. Y.)...100	1,000,000	q'arterly	Oct. '82 3
Central Ohio*.....50	2,437,950	semi-an	Jan. '83 3	N. Y. and Harlem.....100	1,500,000	q'arterly	Jan. '83 4	42d St. & G. St. Ferry100	747,000	semi-an.	May '82 6
" " pref.100	411,550	semi-an	Jan. '83 3	" " City Line..... 100	1,000,000	annual	Apr. '82 3	Frankf. & Southw (Ph) 50	600,000	q'arterly	Oct. '82 6
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	N. Y., Lack. & West.100	10,000,000	q'arterly	Jan. '83 1 1/2	Germantown, (Ph.)... 50	1,540,902	q'arterly	Jan. '83 2 1/2
Cheshire preferred.....100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West.100	77,087,600	annual	Jan. '83 6	Girard College (Ph.)... 50	500,000	semi-an.	July '71 3
Chicago and Alton.....100	11,181,741	semi-an	Mar. '83 4	" " pref.100	77,087,600	annual	Jan. '83 6	Grand St. & Newton..... 50	170,091	semi-an.	July '81 2 1/2
" " pref.100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart.100	15,500,000	semi-an.	Jan. '83 5	Green & Coates St. (Ph) 50	708,650	q'arterly	Jan. '83 3
Chi., Burl. & Quincy.....100	69,508,105	q'arterly	Mar. '83 2	N. Y., Prov. & Boston100	3,600,000	q'arterly	Feb. '83 2	Heston, Mantau & F'm 50	299,381	semi-an.	Jan. '75 4
Chi., Iowa & Nebras*100	3,916,200	semi-an	Jan. '83 4	Niag. Bridg. & Canand*100	1,000,000	semi-an.	Oct. '82 3	Highland.....100	600,000	semi-an.	Jan. '83 4
Chi., Mil. & St. Paul.....100	20,404,261	semi-an	Oct. '82 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Mar. '83 3	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
" " pref.100	14,401,483	semi-an	Oct. '82 3 1/2	" " pref.100	1,000,000	semi-an.	Mar. '83 3	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	Norfolk & Western pref. 50	15,000,000	q'arterly	Dec. '82 1	Malden and Melrose.100	165,000	.....	.....
" " pref.100	21,525,353	q'arterly	Dec. '82 2	North Pennsylvania. 50	4,527,150	q'arterly	Feb. '83 1 1/2	Metropolitan (Bost.) 50	1,500,000	semi-an.	Jan. '83 4
Chi., R. I. & Pacific.....100	41,960,000	q'arterly	Feb. '83 1 1/2	Northern Central..... 50	6,142,000	semi-an.	Jan. '83 4	Middlesex (Boston).....100	650,000	semi-an.	Nov. '82 3 1/2
Chi. and West Mich.....100	6,151,000	semi-an	Feb. '83 1	Northern N. Hampshire100	3,068,400	semi-an.	Dec. '82 3	N. Y., Bay Ridge & Jam.100	150,000	.....	Oct. '78 7
Chi., St. P., M. & O. pref.100	10,390,000	q'arterly	Jan. '83 1 1/2	Northern Pacific pref.100	41,909,132	.....	Jan. '83 11.1	Ninth Av. (N. Y.)...100	797,320	.....	.....
Cin., Ham. & Dayton.....100	3,500,000	semi-an	Jan. '83 3	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5	Orange & Newark..... 50	282,555	.....	.....
C. Ind., St. L. & Chi.....100	6,000,000	q'arterly	Jan. '83 1 1/2	Oregon & Transcontl.100	40,000,000	q'arterly	Jan. '83 1 1/2	People's (Phila.) pref. 25	115,250	.....	July '82 2
Cin., Sand. & Cleve. pf. 50	429,037	semi-an	Nov. '82 3	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2	Philadelphia City... 50	475,000	semi-an.	July '82 4
Clev., Col., Cin. & Ind.100	14,991,800	.....	Feb. '83 2	Oregon R'way & Nav.100	18,000,000	q'arterly	Feb. '83 2 1/2	Phila. & Grey's Ferry. 20	308,000	semi-an.	Jan. '82 6
Clev. and Pittsburg* 50	11,244,336	q'arterly	Mar. '83 1 1/2	Oswego & Syracuse...100	1,320,400	semi-an.	Feb. '83 4 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Columbus & Xenia* 50	1,786,200	q'arterly	Dec. '82 2	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	Ridge Avenue (Ph.)... 50	420,000	semi-an.	Oct. '81 11
Col., Hock. Val. & Tol.100	10,316,500	.....	Jan. '83 2 1/2	Paterson & Hudson*100	630,000	semi-an.	Jan. '83 4 1/2	Second Avenue (N.Y.)100	1,199,500	semi-an.	July '82 4
Concord.....50	1,500,000	semi-an	Nov. '82 5	Pemberton & Ramapo.100	248,000	semi-an.	July '82 4	Second & Third St. (Ph) 50	771,076	q'arterly	Jan. '83 4
Concord and Ports*.....100	350,000	semi-an	Jan. '83 3 1/2	Pember. & Hightst'n* 50	342,150	semi-an.	Jan. '83 3	17th & 19th sts (Ph.)... 50	250,000	semi-an.	July '81 3
Conn. & Passump. Riv.100	2,244,400	semi-an	Feb. '83 3	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2	Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82 5
Connecticut River...100	2,100,000	semi-an	Jan. '83 4	Pennsylvania Co..... 50	20,000,000	annual	Dec. '82 4	Somerville (Boston).....100	113,000	semi-an.	Nov. '82 3
Cumberland Valley... 50	1,292,950	q'arterly	Jan. '83 2 1/2	Peoria & Bureau Val*100	1,200,000	semi-an.	Feb. '83 4	South Boston..... 50	600,000	semi-an.	Jan. '83 4
" " 1st pref 50	241,900	semi-an	Oct. '82 4	Philadelphia & Erie* 50	7,013,700	semi-an.	Jan. '75 4	Third Avenue, N. Y.100	2,000,000	q'arterly	Aug. '82 5
" " 2d pref. 50	243,000	semi-an	Oct. '82 4	" " pfd 50	2,400,000	q'arterly	Dec. '82 3	23d street, N. Y.....100	334,529	q'arterly	Jan. '83 4
Danbury & Norwalk. 50	600,000	.....	Oct. '82 2 1/2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Jan. '76 2 1/2	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
Dayton and Mich.*.....50	2,402,573	semi-an	Oct. '82 1 1/2	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2	Union, Phila..... 50	1,005,000	semi-an.	Jan. '82 7
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	" " pref. 50	1,551,800	q'arterly	July '76 3 1/2	West Philadelphia..... 50	750,000	semi-an.	July '77 10
Delaware*.....25	1,468,940	semi-an	Jan. '83 3	Phila. and Trenton.....100	1,259,100	q'arterly	Jan. '83 2 1/2				
Del. & Bound Brook100	1,652,000	q'arterly	Feb. '83 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4				
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Pittsb., Ft. W. & Chi.*100	19,714,285	q'arterly	Jan. '83 1 1/2				
Denver & Rio Grande100	29,160,000	q'arterly	Jan. '82 1 1/2	" " Special Imp.100	6,770,900	q'arterly	Jan. '83 1 1/2	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
Detroit, Lans. & Nor.100	1,285,600	semi-an	Feb. '83 3	Pittsfield & N. Adams.100	4,400,000	semi-an.	Jan. '83 2 1/2	Delaware Division... 50	1,633,350	semi-an.	Feb. '83 2
" " pref.100	2,503,380	semi-an	Feb. '83 3 1/2	Portl., Saco & Portsm.100	1,500,000	semi-an.	Jan. '83 3	Delawa. and Hudson100	20,000,000	q'arterly	Dec. '82 1 1/2
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Providence & Worcester100	2,000,000	semi-an.	Jan. '83 3	Delaware & Raritan*100	5,847,400	q'arterly	Jan. '82 2 1/2
East Pennsylvania*..... 50	1,709,550	semi-an	Jan. '83 3	Rensselaer & Saratog.*100	7,000,000	semi-an.	Jan. '83 4	Lehigh Coal and Nav 50	1,204,250	semi-an.	Dec. '82 2
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Richmond & Danv.....100	5,000,000	q'arterly	Aug. '82 2	Monongahela Nav..... 50	1,004,500	semi-an.	Jan. '83 3 1/2
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 1 1/2	Richmond & Petersb.100	1,009,300	semi-an.	Aug. '82 2	Morris, consolidated.100	1,025,000	semi-an.	Aug. '82 2
Eel River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '83 3	" " preferred.....100	1,175,000	semi-an.	Aug. '82 5
Elmira & Williamst*100	500,000	semi-an	Nov. '82 1 1/2	Rome Water & Ogden*100	5,293,900	.....	Jan. '83 3	Pennsylvania..... 50	4,501,200	.....	.....
" " pref. 50	500,000	semi-an	Jan. '83 3 1/2	Rutland preferred... 100	4,000,000	semi-an.	Sept. '82 1	Schuyl. Nav., com.* 50	859,100	annual	Oct. '82 soc.
Erie and Pittsburg*..... 50	1,998,400	q'arterly	Dec. '82 1 1/2	Spytun Du'vil & Pt. M.100	989,000	semi-an.	Jan. '83 4	" " pref. 50	3,200,000	annual	Oct. '82 \$1
Evansville & Terre H.100	100,000	semi-an	Jan. '83 6b	St. L., Alt. & T. Haute.100	2,300,000	.....	.....				
Fitchburg.....100	4,500,000	semi-an	Jan. '83 3	" " pref.100	2,468,406	.....	Dec. '82 4				
F. & P. Marquette pf.100	6,500,0										

# THE RAMAPO IRON WORKS,

MANUFACTURERS OF

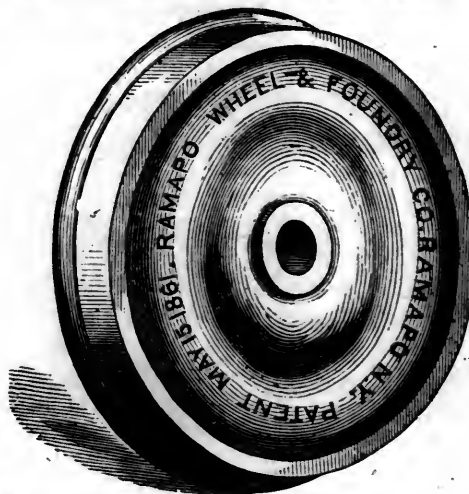
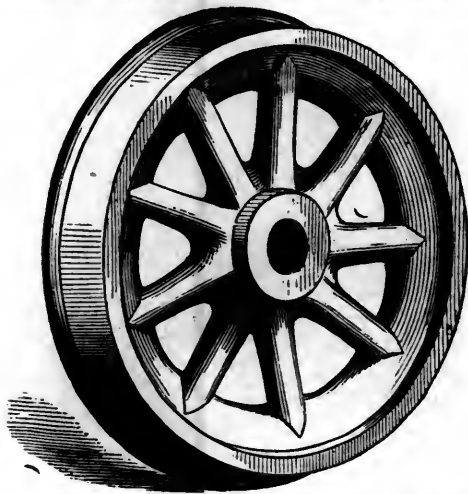
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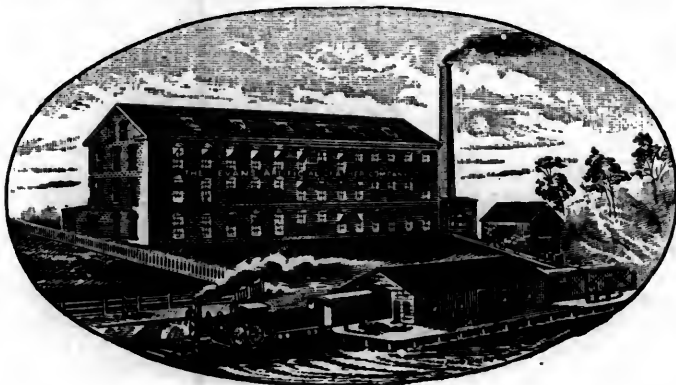


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IF NOT HERE ARE SOME GOOD REASONS WHY YOU SHOULD USE IT.

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It is unaffected by HEAT or COLD, and is impervious to OIL or WATER.

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Cheaper, stronger and less liable to get out of repair than tin. Any mechanic can apply it. Sample Circular and Price List free by mail at request.

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MANUFACTURERS OF  
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## Continuous Automatic FREIGHT BRAKES.

Requiring no other Connection  
between Cars than the ordinary  
Coupling-Link  
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**SIMPLE, DURABLE, AND EFFICIENT.**

Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

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Locomotives—Two Second-hand Narrow-Gauge Engines in good order.

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"36 per cent of coal saved and the car kept noticeably warmer!"

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It heats quickly, is **SELF-REGULATING,**

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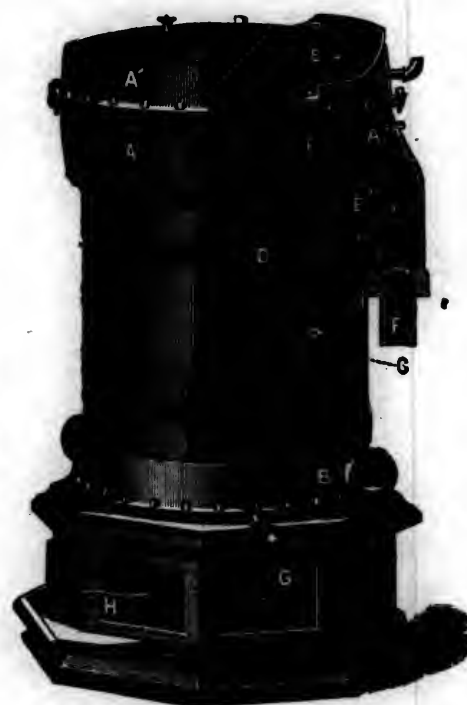
The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low State of combustion without danger of chilling the fire.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

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## FINANCIAL DEPARTMENT.

## THE FAULT OF EDUCATION.

A PAMPHLET was recently sent us entitled "What, Do You Greenbackers Want Anyway?" presumably issued in the interest of the Greenback party. After a perusal of this document we should say that the Greenbackers want the Government to create something out of nothing, by making their currency actual money.

The Greenback party is a thing of the past, and their issues are dead issues. The party itself still maintain an existence and that is all. The ship is there, and the crew are on board, but unfortunately there is no water on which the craft may sail. At last accounts she was stranded up in Maine; where her early breaking up can with confidence be predicted. It is not our intention to aid in floating this stranded vessel, but this issue of this Greenback circular suggests a few thoughts on the subject of an educational deficiency that marks our common schools.

Financial heresies such as were propagated by the late Greenback party are invariably the outgrowth of periods of financial and commercial depression. No country is safe from the occasional attacks of that financial epidemic known as hard times, and like contagious fevers it will run its course despite the wisest exercise of statesmanship and finance. The agitation of such wild-cat schemes as those of the Greenbackers in order to check this depression is analogous to the superstitious practices of negroes to ward off the approach of diseases which imperil them. In both cases ignorance is the primary cause of action, an ignorance which in the case of the Greenbacker is shared by nine-tenths of his fellow men, though they may not affiliate with him in his political views. It is doubtful if a single Greenbacker can define the significance of the words *money* and *value*, and in the rank and file of other parties the same dense ignorance prevails.

This state of affairs should excite no surprise. The schools of our country ignore the subjects of value and money, deeming their scholars sufficiently acquainted with the intricacies of exchange when they can repeat with parrot-like precision, "ten mills make one cent; ten cents make one dime;" etc. If you ask them to define a dollar, they will readily answer "one hundred cents," if to define a cent, "ten mills," but ask them what a mill is and the source of their information no longer contributes to their knowledge. They know how much a cent is, and what it may buy

but have not the faintest conception of *what* it is or of what money is in the abstract, and this ignorance is solely attributable to the wretched text-books that our schools employ.

We do not ask that common school children should be thoroughly instructed in all the minute ramifications of political economy and science. Many of our colleges and universities have excellent departments devoted to the pursuance of these subjects, but there is no call for them in our ordinary public and private schools. It would be sufficient in these schools, to instruct the scholars in the principles of value and money before they burden their minds with the equivalence of current denominations. A competent arithmetician could embody the whole subject with clearness and comprehension in a few pages, after studying which his pupils would know that a dollar had a wider signification than ten dimes or a hundred cents and that a pound sterling meant more than twenty shillings. Thoroughly instructed in these rudiments of political economy the growing generation would arrive at manhood free from an ignorance which now prevails; and their adoption of such absurd views as are enunciated in the miscalled principles of the Greenback party would be impossible.

## Financial Review.

WEDNESDAY EVENING, MARCH 7, 1883.

THE rates for call loans, on stocks as collateral, during the forenoon, were 7, 8 and 9 per cent. After 12.30 the rates were 8 and 9 per cent; and in the last hour of business were successively 10, 11 and 7 per cent.

The posted rates for foreign exchange were 4.81½@4.84. The actual rates were as follows, viz: Sixty-day bills, 4.80½@4.81; Demand, 4.83@4.83½; Cables, 4.83½@4.84; Commercial bills were 4.79@4.79½. Continental bills were as follows, viz: Francs, 5.23½@5.23½ and 5.21½@5.20½; Reichsmarks, 94½@94½ and 94½@94½; Guilders, 39½@40.

The gross earnings of the Northern Central Railway, for the year ending December 31, 1882, were \$5,800,176.03, the operating expenses \$3,842,323.05, and the net earnings \$1,957,852.98—showing an increase, compared with the year 1881, in gross earnings of \$356,476.03 or 6.55 per cent, in operating expenses of \$44,877.14, or 1.45 per cent, and in net earnings of \$301,598.89, or 18.21 per cent. The total number of passengers carried in 1882, was 2,590,582, against 2,430,192 in 1881, an increase of 160,420, or 6.60 per cent. The passenger mileage increased 6.86 per cent, and the revenue derived therefrom increased \$77,235.39 or 9.55 per cent, showing a net profit per mile of 2.44 miles, as compared with a profit in 1881 of 1.85 miles.

The Governors of the New York Stock Exchange have admitted to dealing at the Board the following securities:—

New York, Lackawanna and Western Railroad Co.—Capital stock guaranteed 5 per cent

\$10,000,000 in shares of \$100 each, and \$12,000,000 first mortgage 6 per cent bonds, due January 1, 1921. The principal and interest of the bonds and dividends of the stock are guaranteed by the Delaware, Lackawanna and Western Company under a lease which was ratified by the stockholders of both companies February 20, 1883. It estimated that to make this property available the Delaware, Lackawanna and Western Company will have to assume further liabilities upon the property of from \$5,000,000 to \$10,000,000.

Buffalo, New York and Philadelphia Railway Company.—Consolidated mortgage bonds for \$11,000,000 on 325 miles of roadway; the bonds bear six per cent interest and are due July 1, 1921; \$4,000,000 of the consols are held by the United States Trust Company for the retirement of a like amount of divisional bonds on 120 miles of road; when these bonds are retired the consols will be a first mortgage upon the whole line.

Albany and Susquehanna Railroad Co.—An additional \$3,000,000 6 per cent bonds due April 1, 1906, issued under and secured by the first consolidated mortgage for \$10,000,000 of April 1876, the previous issue under that mortgage was \$3,000,000 7 per cent bonds in May, 1876; principal and interest are guaranteed by the Delaware and Hudson Canal Company.

Peoria and Pekin Union Railway Company.—First mortgage gold 6 per cent bonds, interest payable quarterly and due February 1, 1921, \$1,500,000; and income mortgage bonds, 6 per cent non-accumulative, due February 1, 1921, and principal payable in gold coin, \$1,500,000.

Atchison, Topeka and Santa Fe Railroad Company.—An additional \$1,500,000 bonds, issued under the indenture of trust with the Boston Safe Deposit and Trust Company, bearing interest at 6 per cent, payable semi-annually and due December 1, 1911.

Oregon Improvement Company.—Capital stock, \$5,000,000 in shares of \$100 each; and first mortgage gold bonds, \$5,000,000, bearing 6 per cent interest, due December 1, 1910, but subject to calls by provisions of a sinking fund trust.

The statement of the business of all the lines of the Pennsylvania Railroad Company east of Pittsburgh and Erie for January, 1883, as compared with the same month in 1882, shows an increase in gross earnings of \$556,036, an increase in expenses of \$159,244, and an increase in net earnings of \$396,792. All lines west of Pittsburgh and Erie for January, 1883, show a surplus over all liabilities of \$174,981, being a gain as compared with January, 1882, of \$132,233.

Bonds to the amount of \$1,800,000 have been disposed of by the managers of the Kentucky Central Railroad, from which enough was realized to pay the bonded indebtedness due March 1, and leave a balance sufficient to complete the road to connect with the Knoxville Extension, East Tennessee, Virginia and Georgia system.

The gross earnings of the Northern Central Railway for the month of January, 1883, were \$499,252.84, the operating and extraordinary expenses \$341,033.41, and the net earnings \$158,219.43, against \$92,608.80 in January, 1882, an increase of \$65,610.63.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Mar. 6.

	W. 28.	Th. 1.	F. 2.	Sat. 3.	M. 5.	Tu. 6.
Adams Express.....	133	132	132	132	132	132
Albany and Susq. ....						
1st mortgage.....	111					
2d mortgage.....						
American Express... 90%	90	90	90	90	90	90
Burl. C. R. & Nor. ....	81	81	81	81	81	81
1st mortgage 58. ....	100	100	100	100	100	100
Canada Southern .. 66	66	66	66	66	66	66
1st mortgage guar. ....	95	95	95	95	95	95
Canadian Pacific.... 59	59	58	58	59	59	59
Central of N. Jersey 71	71	71	71	71	71	71
1st mort. 1890..... 113	113					
7s, consol. ass. .... 110	110	110	110	110	110	110
7s, convertible ass. ....	110	110	110	110	110	110
7s, Income.....						
Adjustment.....				106		
Central Pacific..... 79	81	80	80	81	80	80
6s, gold.....	113	113	113	113	113	113
1st M. (San Joaquin) ..				112		
1st M. (Cal. & Or.) ..						
Land grant 6s.....						
Chesapeake & Ohio. ....	22	22	22	22	23	23
1st pref.....	30	30	31	31	32	32
2d pref.....	24	24	24	24	24	24
1st mort., series B .. 91	91	91	91	91	91	91
Chicago and Alton. ....	133	131	133	132	134	134
Preferred.....						
1st mortgage.....						
Sinking Fund.....						
Chi., Bur. & Quincy... 116	117	117	117	117	118	117
7s, Consol. 1903..... 126	126					
Chi., Mil. & St. Paul 101	101	101	101	101	101	99
Preferred.....	119	120	120	120	118	118
1st mortgage, 8s. ....						
2d mort., 7 3/4s.....						
7s, gold.....						
1st M. (La. C. div) ....					119	
1st M. (I. & M. div.) ..						
1st M. (I. & D. ext.) ..						
1st M. (H. & D. div.) ..		117				
1st M. (C. & M. div.) ..						
Consolidated S. F. ....	123	123				
Chi. & Northwestern 132	132	132	132	133	131	131
Preferred.....	145	146	146	146	147	146
1st mortgage.....						
Sinking Fund 6s. ....					110	
Consolidated 7s. ....		131		130		
Consol. Gold bonds 125						
Do. reg.....	124	124				
Chi., R. Isl. & Pac. ....	121	122	122	122	123	123
6s, 1917, c.....	125	125	125	124	124	124
Chi., St. P. Minn. & O. 48	48	48	48	48	48	47
Preferred.....	107	103	107	107	108	107
Clev., Col. & Ind. .... 73	73	72		74	73	73
Clev. & Pittsburg gr. 7s						138
Consolidated.....		129				
4th mortgage.....						
Col., Chi., & Ind. Cent 6	6	6	7	7	6	6
Del. & Hud. Canal. ....	106	107	106	107	107	108
Reg. 7s, 1891.....			114			114
Reg. 7s, 1884.....			103			102
7s, 1894.....			117			
Del., Lack. & Western 122	123	123	123	123	125	123
2d mortgage 7s.....						
Consol. 1907.....						
Erie Railway.....						
1st mortgage.....						
2d mort. 5s, ext.....						
3d mortgage.....						
4th mort. 5s, ext.....						
5th mortgage.....						
7s, Consol. gold.....	125	125			125	125
Great West. 1st mort 2d				100		
Hannibal & St. Jo. ....					38	
Preferred.....	81	84			82	
8s, Convertible.....	108	104		104		
Houston & Tex. Cen. ....						
1st mortgage.....						
2d mortgage.....						
Illinois Central.... 144	144		143	143	143	143
Lake Shore & Mich. So 108	109	109	109	109	109	109
Consol. 7s.....						
Consol. 7s, reg.....						
2d Consolidated.....					120	
Lsh. & W. B. con. ass 101	100				103	
Long Dock bonds.....						
Louisville & Nash. ....	54	54	54	54	54	53
7s, Consol. reg.....				116	116	
Manhattan.....	45	46	48	47	47	48
1st pref.....						
Met. Elevated.....	80				80	
1st mortgage.....		96	96	96	96	96
Michigan Central.... 93	94	94	94	95	93	
7s, 1905.....						
Minn. & St. Louis.. 26	26	26	27	26	26	
Preferred.....	57	57	57	60	60	

Morris & Essex.....	123	123	122	122	122	122
1st mortgage.....						
2d mortgage.....						
7s of 1871.....				122	122	
7s, Convertible.....						
7s, Consolidated.....	122				121	121
N. Y. Cen. & Hud. R. ....	126	126	126	126	127	126
6s, S. F. 1883.....	102	102	102	102		
6s, S. F. 1887.....						
1st mortgage.....	129	129	129	129	129	129
1st mortgage, reg.....						
N. Y. Elevated.....						
1st mortgage.....						
N. Y. & Harlem..... 200						
1st mortgage.....						
1st mortgage, reg.....						
N. Y. Lake Erie & W. Preferred.....	37	37	36	36	37	36
2d Consolidated.....	96	97	96	96	97	96
New 2d 5s fund.....				95	95	95
N. Y. N. Hav'n & Hart						
North Mo. 1st mort.....	119		119			
Northern Pacific.... 48	48	49	49	49	48	48
Preferred.....	83	83	85	86	87	85
Ohio & Mississipp. ....	33	32				
2d mortgage.....						
Consolidated 7s.....						
Consol. S. Fund.....				116		
Pacific Mail S. S. Co 41	41	41	41	41	41	41
Pacific R. R. of Mo. ....						
1st mortgage.....	105		105			
2d mortgage.....						
Panama.....						
Phila. & Reading.... 53	54	54	54	54	54	53
Pitts. Ft. W. & Chi. gtd 135				136		
1st mortgage.....						
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car 119			120	119	120	
Quicksilver Min'g Co. ....			9	9		
Preferred.....	43		44	46	46	
St. Louis & San Fran 20	48	48	48	49		
Preferred.....	89	90	90	90		
1st Preferred.....						
St. L., Alb'n & T. H. ....	68	68	68	68		
Preferred.....	99	99	99			
1st mortgage.....						
2d mort. pref.....						
Income bonds.....	105	105				
St. L., Iron Mt. & S. ....						
1st mortgage.....						
2d mortgage.....			108	109		
Toledo and Wabash. ....						
1st mortgage.....	106			106		
2d mortgage.....				99		
7s, Consolidated.....						
St. Louis Division.....	101			101	102	
Union Pacific..... 94	94	93	94	94	93	
1st mortgage.....	113	113	113	114	114	113
Land Grant 7s.....	109					
Sinking Fund 8s. ....	119	115	114	114	115	
United States Ex.....						
Wabash, St. L. & Pac. ....	28	28	28	29	30	28
Preferred.....	47	47	47	47	49	47
New mort. 7s.....						
Wells-Fargo Ex.....			124	124	122	
Western Pacific b'ds ..					111	
Western Union Tel. ....	82	82	82	82	83	82
7s, S. F. conv., 1900 ..					115	

## Boston Stock Exchange.

Closing Prices for the Week Ending Mar. 6.

	W. 28.	Th. 1.	F. 2.	Sat. 3.	M. 5.	Tu. 6.
Atch., Top. & San. Fe. ....	78	78	78	79	79	79
1st mortgage.....						
Land Grant 7s.....						
Boston & Albany.... 176	174	174	174	174		
Boston and Lowell.....						
Boston & Maine..... 152		152	152	152	155	
Boston & Providence .. 162						
Bos'n, Hart. & Erie 7s ..						
Burl. & Mo. R. L. G. 7s ..					116	
Burl. & Mo. R. in Neb 6s, exempt.....						
4s.....	80			80		
Chi., Burl. & Quincy... 116	117	118	117	118	118	
Clin., Sand & Cleve (\$50) ..						
Concor' (\$50).....						
Connecticut River.....						
Eastern.....	44	45	45	48		
New 6s, Bond.....	109	110	110	109		

Fitchburg.....	118				120	
N. Y. & New England 46	46	46	48	47	47	
7s.....	114				114	
Northern N. H. ....						
Norwich & Worcester ..						
Ogden & Lake Cham.....						
Old Colony.....	134	135	134	134	132	
Ph. Wil. & Balt. (\$50) ..						
Portl'd, Saco & Ports ..			113			
Pueblo & Ark Val 7s .. 112	112					
Pullman Palace Car 120	120	119			120	
Union Pacific..... 93	94	93	93	94	93	
6s.....		114				
Land Grant 7s.....						
Sinking Fund 8s.....	114	115			115	
Vermont & Mass.....	130					
Worcester & Nashua ..				58		
Cambridge (Horse)....						
Metropolitan (Horse) ..						
Middlesex (Horse)....						
Cal. & Hecla Min'g Co ..		24	24	24	24	
Quincy.....	50	50	50	50	49	49

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Mar. 6.

	W. 28.	Th. 1.	F. 2.	Sat. 3.	M. 5.	Tu. 6.
Allegh'y Val. 7 3-10s	.....	.....	.....	.....	.....	.....
7s, Income.....	.....	.....	.....	.....	.....	.....
Buff., N. Y. & Phila.	15%	16	16	15%	16	15%
Camd'n & Am. 6s, '83	.....	.....	.....	.....	.....	.....
6s, 1889.....	.....	.....	.....	.....	.....	.....
Mort. 6s, 1889.....	112%	.....	.....	.....	.....	.....
Camden & Atlantic.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Catawissa.....	.....	.....	.....	.....	.....	.....
Preferred.....	.....	58	.....	.....	57%	57%
2d pref.....	.....	.....	55	55	.....	.....
7s, new.....	.....	.....	.....	.....	.....	.....
Del. & Bound Brook	.....	.....	.....	.....	.....	.....
7s.....	.....	.....	.....	.....	.....	.....
Elmira & Williamspt	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
Hunt. & B. Top Mt.	.....	.....	.....	14%	15	.....
Preferred.....	.....	.....	.....	29%	30%	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Lehigh Navigation.	40%	41%	41%	41%	41%	41%
6s, 1884.....	.....	.....	.....	.....	.....	.....
Gold Loan.....	111%	.....	111%	.....	112	.....
Railroad Loan.....	.....	.....	.....	.....	.....	.....
Conv. Gold Loan.....	.....	.....	.....	.....	.....	106%
Consol. Mort. 7s.	.....	.....	.....	.....	.....	.....
Lehigh Valley.....	65%	65%	65%	65%	65%	65%
1st mort. 6s, coup	.....	122	.....	.....	.....	.....
1st mort. 6s, reg..	.....	123%	.....	.....	.....	.....
2d mort. 7s.....	.....	.....	.....	132	.....	.....
Consol mort. 6s..	.....	.....	.....	.....	.....	123
Consol.mtg.6s,reg	123	123	123	.....	.....	.....
Little Schuylkill...	.....	.....	.....	.....	.....	.....
Minehill&Sch.Hav'n	.....	.....	.....	63%	.....	.....
North Pennsylvania	67	67	.....	.....	67	67
1st mortgage 6s..	103%	.....	.....	103%	.....	.....
2d mortgage 7s..	120%	.....	.....	.....	.....	.....
Genl. mtg. 7s, coup	.....	.....	.....	.....	.....	.....
Genl. mtg. 7s, reg	.....	.....	.....	.....	.....	.....
Northern Central..	55%	56	55%	55%	55%	.....
5s.....	101	101	101	.....	101	.....
Northern Pacific...	48%	48%	49%	49%	49%	48%
Preferred.....	83%	83%	85%	86%	87	86
Pennsylvania R. R.	61%	61%	61%	61%	61%	61%
1st mortgage.....	.....	.....	.....	.....	.....	.....
Gen'l mort.....	.....	123%	.....	.....	.....	.....
Gen'l mort reg..	.....	.....	.....	.....	.....	.....
Consol. mort. 6s.	.....	.....	.....	.....	.....	.....
Consol. mort. reg	119%	.....	.....	.....	.....	.....
Pa. State 5s, new...	.....	118	.....	.....	.....	117
do 4s, new.....	.....	.....	.....	.....	.....	.....
do 3 1/2s, 1912...	.....	.....	.....	.....	.....	.....
Phila. & Reading...	26%	27%	27%	27	27	26%
1st mortgage 6s..	.....	.....	.....	.....	.....	.....
7s of 1893.....	.....	.....	120	120	120	120
7s, new convert..	.....	75	75%	75	.....	.....
Consol. mort. 7s..	.....	.....	126	.....	.....	.....
Consol. mort. reg.	.....	.....	.....	.....	.....	.....
Gen'l mort. 6s....	96%	96%	96%	96%	96%	96%
Def.Income bonds	.....	.....	.....	.....	.....	.....
Philadelphia & Erie	.....	.....	.....	.....	21%	.....
1st mortgage 5s..	105	105	105	105	.....	.....
2d mortgage 7s..	112%	.....	.....	.....	.....	112%
Pittsb., Cin.&St.L.7s	.....	.....	120%	.....	.....	.....
Pitts. Tit. & Buff. 7s.	.....	.....	.....	.....	.....	.....
Schuylkill Navi't'n.	.....	.....	.....	.....	.....	.....
Preferred.....	14	14	.....	.....	14	14
6s, 1897.....	.....	.....	.....	.....	.....	.....
6s, 1907.....	.....	89%	.....	.....	.....	.....
United Co. of N. J..	191	.....	191	.....	191	191
Hestonville, (Horse)	.....	.....	.....	.....	.....	.....
Chestnut&Walnut).	.....	.....	.....	.....	.....	.....

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Mar. 5.

Tu. 27. W. 28. Th. 1. F. 2. Sat. 3. M. 5.

Baltimore & Ohio...	200	105 1/4	105	105	105
68, 1885.....	105 1/4	105 1/4	105	105	105
Central Ohio (\$50)...	111	108 1/2	108 1/2	108 1/2	108 1/2
1st mortgage.....	111	108 1/2	108 1/2	108 1/2	108 1/2
Marietta & Cincin'ti.	133 1/4	132 1/4	132 1/4	132 1/4	132 1/4
1st mortgage, 78....	133 1/4	132 1/4	132 1/4	132 1/4	132 1/4
2d mortgage, 78....	105	104 1/4	104 1/4	104 1/4	104 1/4
3d mortgage, 88....	54 1/4	54 1/4	54	54	54
Northern Cen. (\$50)...	55 1/4	55 1/4	55 1/4	55 1/4	55 1/4
2d mort. 68, 1885....	117 1/8	117 1/8	117 1/8	117 1/8	117 1/8
3d mort. 68, 1900....	114 1/4	114 1/4	114 1/4	114 1/4	114 1/4
68, 1900, gold.....	114	114	114	114	114
68, 1904, gold.....	100 1/4	100 1/4	100 1/4	100 1/4	100 1/4
58, series A.....	95 1/4	95 1/4	95 1/4	95 1/4	95 1/4
58, series B.....	121 1/4	122	122	122	122
Pitts. & Connells. 78.	51	51	51	51	51
Virginia 68 Consol....	48 1/4	48 1/4	48 1/4	48 1/4	48 1/4
Consol. coupons.....	40 1/4	40 1/4	40 1/4	40 1/4	40 1/4
10-40 bonds.....	41 1/4	41 1/4	41 1/4	41 1/4	41 1/4
Def'd Certificates....	48	48	48	48	48
New 38.....	122	122	122	122	122
City Passenger R. R.	122	122	122	122	122

**London Stock Exchange.**

Closing Prices

	Feb. 9.	Feb. 16.
Baltimore and Ohio 58, 1927.....	108	110
Central of N. J., \$100 shares.....	70	75
Do. consol. mort.....	113	113
Do. Income Bonds.....	88	88
Central Pacific of Cal., \$100 shs..	83	84
Do. 1st mort. 68, 1895-'98.....	116	116
Det., G'd Haven & Mil. Equip bds. 118	120	118
Do. Con. M. sp. c., till '83 after 6p. c. 117	119	117
Illinois Central \$100 shares.....	149 1/4	150 1/4
Do. S. F. 58, 1903.....	107	105
Lehigh Valley Cons. mort. 1923....	115	120
Louisville and Nashville mort. 68 95	97	95
Do. capital stock \$100 shares....	57	58
N. Y. Cen. & Hud. R. mort. bonds. 130	135	130
Do. \$100 shares.....	131	128 1/4
Do. mort. bonds (stg.).....	121	119
N. Y. Lake Erie & West. \$100 shs. 38 1/4	39	37 1/4
Do. 6 p. c. pref. \$100 shares....	82	84
Do. 1st Con. Mort. bonds (Erie). 130	135	128
Do. do. Funded Coupon bonds. 125	130	122
Do. 2d Consol. Mort. bonds....	99	101
Do. do. Funded Coupon bonds. 97	99	96
N. Y., Pa. & Ohio 1st mort. bonds. 56 1/4	57 1/4	55 1/4
Do. Prior Lien bonds (sterling). 103	106	103
Pennsylvania \$50 shares.....	61 1/4	62 1/4
General Mortgage.....	122	124
Phil. & Erie Gen. mort. 68, 1920....	117	115
Philadelphia & Reading \$50 shs.. 27 1/4	28	27 1/4
General Consol Mortgage.....	117	115
Do. Improvement Mortgage.....	107	105
Do. Gen. Mtg. 74, ex-def'd coup. 95	97	96
St. L. Bridge 1st mort. gold bond. 122	124	122
Do. 1st pref. stock.....	96	92
S. P'fic of Cal., 1st mort 68, 1905-6. 107 1/4	108 1/4	107 1/4
Union Pacific 1st mtg. 68, 1896-9. 116	118	116
Wabash, St. L. & P. \$100 shares.. 31	33	30
Do. \$100 pref shares....	53	54
Do. gen. mort. bonds.....	80	82

**QUOTATIONS.**

THE following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atlantic and Pacific 1st, 94; American Dock and Imp. 58, 88 1/4; Boston and New York Air Line pref., 80 1/4; Buffalo, New York and Erie 1st, 1916, 131; Buffalo, New York and Philadelphia 1st, 96 1/4; Chicago and Eastern Illinois 1st, 95 1/4; Cedar Falls and Minne. sota, 13; Columbia and Greenville pref. 40; Chesapeake and Ohio currency 68, 53 1/4; do. 1st, series A, 07 1/4; Chicago, St. Paul, Minneapolis and Omaha consol., 107; Chicago, Milwaukee and St. Paul, Wis. and Minn. div. 1st, 91; do. Southern Minn. div. 1st, 105 1/4; Chicago and Pacific West div. 1st, 92; Central Iowa 1st, 108; Columbus, Chicago and Indiana Central inc., 64 1/4; do. reorganization certifi., 65; do. 1st mort., Trust Co. cer. sup., 116 1/4; Chicago, Burlington and Quincy, Denver div. 48, 1922, 83 1/4; Chicago and Northwestern S. F. 58, 101 1/4; do. Interest bonds, 103 1/4; Columbus, Hocking Valley and Toledo 1st, 80; Denver and Rio Grande, 44; do. 1st, 108; do. consol., 90; Delaware and Hudson, Penn. div. 1st, 123 1/4; Denver, South Park and Pacific 1st, 96 1/4; East Tenn., Va. and Ga., 8 1/4; do. pref., 15 1/4; do. inc., 35 1/4; do. 58, 73; Evansville and Terre Haute 1st, 97; Fort Worth and Denver, 31 1/4; do. 1st, 66; Gulf, Colorado and Santa Fe 1st, 112; Galveston, Harrisburg and San Antonio, Mex. and Pacific div. 1st, 91 1/4; Hannibal and St. Joseph 68, consol., 103 1/4; Houston and Texas Central 1st, Waco and N. W. div., 111 1/4; Indiana, Bloomington and Western, 32;

do. 1st, 85; do. consol. inc., 44; do. Eastern div. 1st, 91 1/4; Illinois Leased Line, 79 1/4; International and Gt. Northern 1st, 107; do. coup. 68, 83 1/4; Iowa Midland 88, 132; Kansas Pacific 68, Denver div. ass., 108; do. 1st consol., 99 1/4; do. 68, 1895, 108; Lafayette, Bloomington and Muncie 1st, 98 1/4; Lake Erie and Western, 29 1/4; do. 1st, 98 1/4; Long Island, 62 1/4; do. consol. 58, 98; do. 1st, 117; Louisville and Nashville gen'l. mort. 68, 98; do. N. O. and Mobile div. 1st, 90; Louisville, New Albany and Chicago 1st, 102 1/4; Milwaukee, Lake Shore and Western, 15; do. pref., 44 1/4; do. 1st, 98 1/4; Missouri, Kansas and Texas, 31; do. consol. 78, 105 1/4; do. 2d, 59 1/4; do. gen'l. mort. 68, 80 1/4; Missouri Pacific, 100; do. 1st, consol., 105 1/4; do. 3d, 111 1/4; Manhattan Beach, 19; Metropolitan Elevated 2d, 81; Memphis and Charleston, 43 1/4; Mobile and Ohio, 16 1/4; do. 1st, 109 1/4; Michigan Southern, S. F., 106 1/4; Michigan Central 58, 100; do. 88, 106 1/4; Minneapolis and St. Louis 1st, 119 1/4; do. Iowa Ext. 1st, 113; New York City and Northern gen'l. mort. Trust Co. certifi., 46; Nashville, Chattanooga and St. Louis, 58 1/4; New York, Chicago and St. Louis, 12 1/4; do. pref., 28; do. 1st, 97; New York, Ontario and Western, 25; New York, Lackawanna and Wes. 83; do. 1st, 116; Norfolk and Western pref., 41; New York, West Shore and Buffalo 1st, 75 1/4; New York Central sub. 68, 102 1/4; Northern Pacific 1st, 103 1/4; New Orleans Pacific 1st, 88; Ohio Central, 11 1/4; do. inc., 27; do. 1st, 88 1/4; Ohio Southern, 11 1/4; do. 1st, 82 1/4; do. inc., 28; Oregon Trans Continental, 83 1/4; do. 1st, 93; Oregon Railway and Nav., 140 1/4; do. 1st, 107 1/4; Oregon Short Line 68, 95 1/4; Oregon Imp. Co., 89; do. 1st, 91; Peoria, Decatur and Evansville, 21 1/4; do. 1st, 100; Pennsylvania Co. 4 1/2, 95 1/4; Pullman Palace Car debent., 105; Richmond and Alleghany, 11 1/4; do. 1st, 77 1/4; Richmond, Danville and West Point, 23 1/4; Richmond and Danville, 53 1/4; do. debent., 64 1/4; do. 1st, 94 1/4; Rochester and Pittsburgh, 19 1/4; do. 1st, 104 1/4; do. inc., 43; Rensselaer and Saratoga, 144; Rome, Watertown and Ogdensburg 58, ext., 72 1/4; do. inc., 42 1/4; St. Paul and Duluth pref., 95; St. Paul, Minn. and Man., 144; do. 1st, 108; do. 2d, 109; do. Dakota Ext. 1st, 108 1/4; South Carolina, 24; do. inc., 57; do. 1st, 102; St. Louis and San Francisco gen'l. mort., 99; do. 2d, Class B, 94 1/4; do. C, 94 1/4; do. Equip., 103; St. Louis and Iron Mt. 58, 78; do. Cairo and Fulton 1st, 108; St. Paul and Sioux City 1st, 111; do. Southern Pacific of Cal. 1st, 104 1/4; South Pacific of Mo. 1st, 104 1/4; St. Louis, Alton and Terre Haute div. bonds, 72 1/4; Scioto Valley 1st, 93; Texas Central 1st, 105; Texas and Pacific, 39 1/4; do. inc. L. G., 65 1/4; do. Rio Grande div. 1st, 81 1/4; Toledo and Wabash Equip., 80; Union Pacific col. trust, 103; Wabash, St. Louis and Pacific, Chicago div. 1st, 80; do. Gen'l. mort. 68, 79 1/4; do. Toledo, Peoria and Western 1st, 108; Winona and St. Paul 1st, 107 1/4; Arkansas 78, L. R., P. B. and N. O., 48 1/4; do. M., O. & R. R., 45; Alabama, Class A, 82 1/4; do. B, 100; Louisiana consol., 73; do. consol. 58, 98; Missouri 68, 1887, 108 1/4; do. 1888, 109 1/4; North Carolina 68, old, 32; South Carolina 68, Brown consol., 103; do. 68, non-fund., 5 1/2; Tennessee 68, old, 42; Virginia 68, consol., ex-mat. coupon, 58; American Cable, 66; American District Tel., 35 1/4; Mutual Union Tel., 20; do. 68, 85; Colorado Coal and Iron, 32; do. 68, 81; Cameron Coal, 16 1/4; Homestake Mining, 15 1/4.

**Philadelphia.**—American Steamship Co. 68, 108 1/4; Belvidere Delaware 2d, 103; do. 3d, 105; Buffalo, New York and Philadelphia pref., 25 1/4; Central Transp., 34; Cincinnati 7-3cs, J. & J., 131 1/4; Florida Land Imp. Co., 19 1/4; Huntington and Broad Top Mt. consol. mort. 58, 86; Norfolk and Western pref., 39 1/4; Northern Central 58, series B, 95 1/4; Nesquehoning Valley, 51 1/4; Northern Pacific pref. scrip, 85; Pennsylvania and New York Canal 78, 1896, 120; Pennsylvania Car Trust 58, 101; Pennsylvania Canal 68, 85; Pennsylvania Co. 4 1/2, 95; People's Passenger Railway, 10; Philadelphia and Reading adj. scrip, 86; do. scrip, 109 1/4; do. consol. 58, 1st-series, 84; do. 2d series, 66 1/4; do. inc. 78, 93; do. gen'l. mort. 78, 102; Philadelphia, Wilmington and Baltimore 48, 93 1/4; Philadelphia City 68, 1902, 133 1/4; do. 48, 1897, 110; do. 48, 1894, 109; Susquehanna Canal 68, 70 1/4; Second and Third Streets Passenger R. R., 118; Steubenville and Indiana 68, 102 1/4; St. Paul and Duluth pref., 94; Thirteenth and Fifteenth Streets Passenger Railway, 75; Texas and Pacific 1st mort. 68, 103; do. consol. mort. 68, 94; West Jersey R. R., 50; do. 1st, 124 1/4; West Chester and Philadelphia 78, 116.

**Boston.**—Atlantic and Pacific 68, 92; do. inc., 19 1/4; do. blocks, 102; Atchison, Topeka and Santa Fe 1st, guar., 110; Atchison 4 1/2, 80 1/4; Burlington and Missouri River in Neb. 68, non-exempt, 104; Connotton Valley 68, 35

Chicago, Burlington and Quincy 48, old, 86; do. Denver Ext. 48, 82 1/4; do. S. W. div. 48, 79 1/4; Chicago, Iowa and Nebraska, 145; Cincinnati, Sandusky and Cleveland 78, 103; Detroit, Lansing and Northern, 78 1/4; Dubuque 78, 104; Flint and Pere Marquette pref., 98 1/4; Great Falls and Conway, 34 1/4; Kansas City, Ft. Scott and Gulf, 75; do. 78, 112; Little Rock and Ft. Smith 78, 92 1/4; Mexican Central, 21 1/4; do. 78, 73 1/4; do. inc., 22; do. Block No. 3, 95; Marquette, Houghton and Ontonagon, 54; Maine Central, 85 1/4; Massachusetts Central 2 1/4; do. 1st 68, 20; New York and New England 68, 105; New Mexico and Southern Pacific 78, 112; Old Colony 78, 123; Portsmouth, Gt. Falls and Conway, 32 1/4; do. 4 1/2, 83; Republican Valley 68, 104; Sonora 78, 103 1/4; Summit Branch, 7 1/4; Toledo, Cincinnati and St. Louis, 4; Toledo, Delphos and Burlington Branch inc., 10 1/4; do. Dayton div. 68, 40; Wisconsin Central, 24 1/4; do. pref., 31 1/4; do. 78, 1st series, 81; do. 2d series, 55; Atlantic Mining 14; Franklin, 12 1/4; Huron, 1 1/2; Osceola, 30; Pewabic, 7 1/4; Silver Islet, 5.

**Baltimore.**—Atlanta and Charlotte, 62 1/4; do. 1st, 107 1/4; Baltimore and Ohio 1st pref., 129; do. 2d pref., 125; Baltimore City 68, 1890, 114 1/4; do. 68, 1886, 107; do. 68, 1900, 124 1/4; do. 58, 1916, 122 1/4; do. 58, 1894, 113 1/4; do. 48, 1925, 111 1/4; Cincinnati 7-3cs, J. & J., 131; do. M. & N., 132 1/4; Charlotte, Columbia and Augusta, 29 1/4; Columbia and Greenville 1st, 101 1/4; do. 2d, 78; Canton Co. 68, gold, 109 1/4; Maryland Defense 68, 102 1/4; North Carolina 48, 79; Norfolk Water 88, 132; Ohio and Mississippi, Springfield div. 1st, 117 1/4; Parkerburg R. R., 9; Richmond and Danville gold 68, 93; Virginia and Tennessee 88, 124; Virginia Midland 2d mort., 107; do. 3d mort., 92 1/4; do. 5th mort., 95 1/4; do. inc., 50; Virginia consol. coupons, old, 59; do. 10-40 coupons, 48 1/4; do. old, 59; Western Maryland, 14; Wilmington, Columbia and Augusta, 109 1/4; Western North Carolina, 106 1/4.

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## COMMERCIAL DEPARTMENT.

## INTERNAL REVENUE REDUCTION.

WE quote in full, those sections of the Tariff Bill lately passed by Congress and signed by the President which relate to internal revenue:

SECTION 1. That the taxes herein specified, imposed by the laws now in force, be, and the same are hereby repealed, as hereinafter provided, namely: On capital and deposits of banks and bankers and national banking associations, except such taxes as are now due and payable, and on and after the 1st day of July, 1883, the stamp tax on bank checks, drafts, orders, and vouchers, and the tax on matches, perfumery, medicinal preparations, and other articles imposed by schedule. A following section 3,437 of the Revised Statutes; provided that no drawback shall be allowed upon articles embraced in said schedule that shall be exported on and after the 1st day of July, 1883; provided further, that on and after May 15, 1883, matches may be removed by manufactures thereof from the place of manufacture to warehouses within the United States without attaching thereto the stamps required by law, under such regulations as may be prescribed by the Commissioner of Internal Revenue.

SEC. 2. That on and after the 1st day of May, 1883, dealers in leaf tobacco shall annually pay \$12; dealers in manufactured tobacco shall pay \$2.40; all manufacturers of tobacco shall pay \$6; manufacturers of cigars shall pay \$6. Peddlers of tobacco, snuff, and cigars shall pay special taxes, as follows: Peddlers of the first class, as now defined by law, shall pay \$30, peddlers of the second class shall pay \$15, peddlers of the third class shall pay \$7.20, and peddlers of the fourth class shall pay \$3.60. Retail dealers in leaf tobacco shall pay \$250, and 30 cents for each dollar on the amount of their monthly sales in excess of the rate of \$500 per annum; provided that farmers and producers of tobacco may sell at the place of production tobacco of their own growth and raising at retail directly to consumers, to an amount not exceeding \$100 annually.

SEC. 3. That hereafter the special tax of a dealer in manufactured tobacco shall not be required from any farmer, planter, or lumberman who furnishes such tobacco only as rations or supplies to his laborers or employees, in the same manner as other supplies are furnished by him to them; provided, that the aggregate of the supplies of tobacco so by him furnished shall not exceed in quantity 100 pounds in any one special tax year, that is, from the first day of May in any year until the 30th day of April in the next year; and provided further, that such farmer, planter, or lumberman shall not be, at the time he is furnishing such supplies, engaged in the general business of selling dry goods, groceries, or other similar supplies, in the manner of a merchant or storekeeper, to others than his own employees or laborers.

SEC. 4. That on and after May 1, 1883, the internal taxes on snuff, smoking and manufactured tobacco shall be 80 cents per pound, and on cigars which shall be manufactured and sold are removed for consumption or sale on and after the 1st day of July, 1883, there shall be assessed and collected the following taxes, to be paid by the manufacturer thereof: On cigars of all descriptions, made of tobacco or any substitute therefor, \$3 per 1,000; on cigarettes weighing not more than three pounds per 1,000, 50 cents per 1,000; on cigarettes weighing more than three pounds per thousand, \$3 per thousand; provided that on all original and unbroken factory packages of smoking and manufactured tobacco and snuff, cigars, cheroots, and cigarettes, held by manufacturers or dealers at the time such reduction shall go into effect, on which the tax has been paid, there shall be allowed a drawback or rebate of the full amount of reduction. But the same shall not apply in any case where the claim has not been presented within sixty days following the date of the reduction, and such rebate to manufacturers may be paid in stamps at a reduced rate, and no claim be allowed or drawback paid for a less amount than \$10.

SEC. 5. That on and after the passage of this act every manufacturer of tobacco or snuff shall, in addition to all her requirements of law, print on each package, or se-

curely affix by pasting on each package containing tobacco or snuff manufactured by or for him, a label, on which shall be printed the number of the manufactory, the district and State in which it is situated, and these words: "Notice—The manufacturer of this tobacco has complied with all the requirements of law. Every person is cautioned, under penalties of law, not to use this package for tobacco again."

The three last sections of the above relates wholly to the tobacco tax, and the reduction made thereon is considerable. To our way of thinking it is high time the tobacco industry was relieved from the burden of taxation under which it has suffered for many years. The heavy tax upon a commodity in our universal use tobacco invariably results in the production of goods of an inferior quality. The demand for tobacco is certain, and its prices must be moderate. A heavy tax upon its manufacture necessitates the use of poor leaf in order for the makers to realize a profit. While the duty on imported cigars has always been high domestic manufactures have been confronted with almost an equally burdensome tax at home. The poor quality of our domestic segars is due more to this fact than to conditions of growth and diameter. The abolition of the stamp act upon bank checks and notes is of immense benefit to the commercial and mercantile world in labor-saving done regardless to the relief from a constant expense incidental to any business. It is doubtful if the abolition of the tax upon matches will be of material benefit to any one, the price of that commodity being already as low as could be, but at least our own field of industry is opened to the public, instead of being almost a monopoly as heretofore. The perfumery and patent medicine manufacturers have probably cause for rejoicing than the public, who would willingly have let the tax remain upon these luxuries in order to reduce that upon these taxable commodities of greater utility. So far as it goes the reduction of the tax upon domestic products is fairly satisfactory, but it cannot be said to go very far. The ensuing Congress might take up the matter where it has been dropped, and devote a whole session to its further consideration without a waste of time, but unfortunately the two parties will probably have too much to do in "making records" for next year's Presidential election to waste these precious moments in the consideration of the nation's welfare.

Our dependence on Brazil as the great source of our coffee supply is rapidly diminishing. Five years ago Mexico sent us only 6,337,063 pounds of coffee; now she ships annually 17,020,669 pounds; Central America has increased her exports to the United States during the same period from 13,868,955 to 22,449,112.

## New York Markets.

Quotations of Wednesday, March 7.

Flour dull and heavy; corn meal quiet and unchanged.

COTTON—Spots fairly active; sales 726 bales; middling uplands, 103-16c.; do. Gulfs, 107-16c. Futures slightly lower, closing dull at 10.14c. for March, 10.26c. for April, 10.38c. for May, 10.51c. for June, 10.64c. for July, 10.75c. for August, 10.47c. for September, 10.18c. for October, and 10.08c. for November; sales 66,000 bales; receipts at the ports, 16,720 bales.

PROVISIONS—Lard was depressed, and speculative values favored buyers, in sympathy with dull foreign advices; sales of futures 17,000 tcs., at 11.36@11.37c. for March, 11.16@11.50c. for April, 11.62c. down to 11.57c. for May, for which month the dealings were more active; 11.60@11.62c. for June, 11.63c. for July, and 11.65c. for August, closing at 11.37c. for March, 11.48c. for April, 11.59@11.60c. for May, 11.62c. for June, 11.63c. for July, 11.66c. for August, and steady; lard on the spot fairly active; sales 1,600 tcs. at 11.15c. for prime city, 11.40c. for prime Western; also 500 tcs. refined for the Continent, 11.40c. Pork quiet; sales 200 bbls. at \$19.25@19.35 for mess, and \$19.20 for family. Bacon and cut meats very quiet. City dressed hogs, 9½@9¾c. Butter dull and drooping; creameries first and extras, 27@40c.; State dairy, 13@26c.; Western, 12@21c.; rolls, 14@21c. Cheese firm; State factory, 10@14c.; Ohio flat, 8@13½c.; creamery skims, 5@8¾c. Eggs in large supply and lower; choice Western, 20½@21; State and Pennsylvania, 20½@21c.; Southern, 19@20½c.; limed, 16@17c.

GRAIN—Wheat lower; export trade fair; spot sales 195,000 bush. at \$1.05@1.25 for red, including No. 2 at \$1.22½@1.23 delivered; steamer do. at \$1.19, and No. 3 at \$1.18½@1.20; \$1.07@1.28 for white, including No. 2 at \$1.07@1.09½, and Canada to arrive at \$1.16@1.19; of options, sales, 3,836,000 bush. No. 2 red at \$1.21½@1.21¾ for March, \$1.23½@1.23¾ for April, \$1.25½@1.26½ for May, and \$1.25½@1.27 for June. Of malt 10,000 bush. two-rowed State sold at \$1 to arrive. Oats lower; sales 950,000 bush. at 52@55c. for mixed, and 54@59c. for white, of which No. 2 at 52½@52¾c. for mixed, and 56¾c. for white; also No. 2 mixed at 52½@52¾c. for March, 52½@52¾c. for April, 52½@52¾c. for May, and 53½@53¾c. for June. Corn lower; spot sales 190,000 bush. at 71½@72c. for new No. 2 mixed, 63@63½c. for No. 3 do., 69@70½c. for steamer mixed, and 63½@72c. for ungraded do.; 69½c. for steamer white, 71c. for do. yellow; of options, sales 2,080,000 bush. No. 2 mixed at 71½@72c. for March, 72½@72¾c. for April, 72½@72¾c. for May, 72½@72¾c. for June, and 73½@73¾c. for July. After 'Change wheat closed firm; No. 2 red winter, cash, \$1.23 delivered: March, \$1.21½; April, \$1.23½; May, \$1.25½; June, \$1.26½. Corn steady: No. 2 mixed, cash, 72½c., delivered: March, 71¾c.; April, 72½c.; May, 72¾c.; June, 72c. Oats firm; March, 52½c.; April, 52¾c.; May, 52¾c.; June, 52¾c.

GROCERIES—Rio coffee on the spot was dull and unchanged; options rather weak; 20,750 bags No. 7 sold at 7.45@7.60c. for April, 7.65@7.75c. for May, 7.85@7.95c. for June, 8@8.05c. for July, 8.35c. for October, 8.50c. for December; mild quiet. Rice and molasses in more demand and steady. Raw sugar was firmer at 7 1-16@7 3-16c. for fair to good refining; sales 6,500 bags at 7½c. for San Domingo, and 6¾c. for Rio Grande; refined firmer; granulated, 9c.; Standard "A," 8½c.; confectioners' do., 4½c. Tea firm at the sale.

## Chicago Grain Markets.

Quotations of Wednesday, March 7.

	Mar.	May.	Opening.	P. M.	Closing.
Wheat...	58½	1.14½	....	1.08	1.13½
Corn...	58½	62½	....	57½	62½
Oats...	43	44½	....	42½	44½
Pork...	....	18.40	....	....	18.27½
Lard...	....	11.52½	....	....	11.42½
S. Ribs..	....	9.90	....	....	9.75

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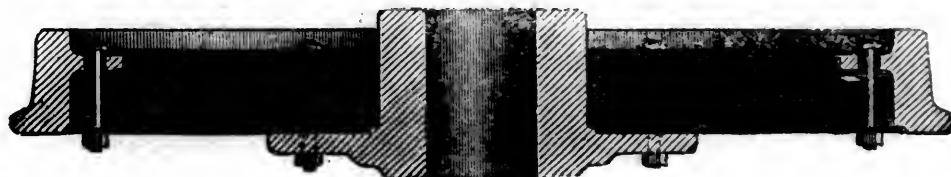
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## MISCELLANEOUS.

### The Modus Operandi of Car Thieves.

To prevent thieves stealing from railway cars is considered almost impossible. Locks or padlocks, no matter how complicated in their construction, were found wholly useless. The car seal, with some slight difference in its construction, has been adopted and universally used; yet thieving still goes on and is gradually increasing as the car thief improves in practice. An old car thief, who recently gave evidence against other members of the gang, explained the different plans adopted by them in robbing cars.

Before a freight train is "made up" they learn the desired contents of some car, together with its number; and before the train leaves containing this car a yard man goes up one side of the train and down the other to examine the seals, and always reports them "O. K.," but two thieves follow him, and when they come to the desired car carefully cut one side of the seal, remove it, open the door, and one enters; the other closes the door behind him and quietly walks away a short distance and watches the car until the train leaves. The conductor takes the train, supposing the seals are perfect.

Thieving is usually done on heavy trains, and while going up steep grades the thief jumps off. The goods are thrown out at some understood place, and quickly concealed by parties waiting to receive them. When the seals are re-examined the theft is discovered, but the thieves usually have a confederate at the first station where the re-examination is to be made who quickly closes the door of any car that has goods in and with his short ladder conceals the cut in the seal by twisting it. A car with a cut seal has been known to start from Boston and run to Sacramento City without its being discovered; seals were reported perfect on every line over which the car passed. A seal examiner cannot get close enough without a ladder, and at night the examination is imperfectly done at best.

Another of their plans was to take a light, strong board into the car. After the goods were thrown out, the door was closed within about a foot. The thief would lay down with his head and shoulders outside in the partly open door, put one end of the board under the car nearly its whole length and on top of the long iron brace that runs under the car lengthwise; across this end of the board they fasten a cleat to prevent slipping off while standing upon it. The thief holds on to the chain-pin and closes the door, adjusts the hasp and pin and conceals the cut in the seal by twisting it; then jumps off. The heavy train going slowly up grade, the thief carries off the board with him.

Still another was to board a train while moving up grade. At a convenient place a board would be run under the car on top of the brace and let it stick out two or three feet. He rides on this projection and slowly assumes an erect posture—breaks the seal and enters the car. This was the plan successfully practiced by car thieves on a Missouri railroad, within 50 miles of St. Louis, in the years 1881 and 1882. The

company never learned how or where the thieves boarded the train until they told of it themselves after they were arrested and convicted.

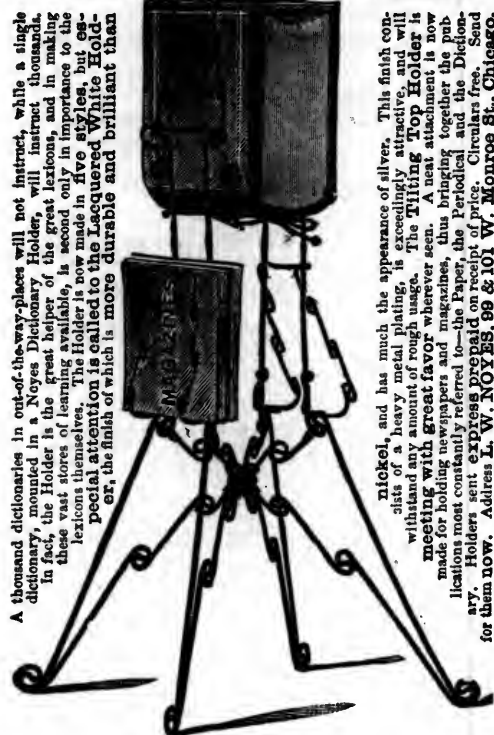
Considerable attention has been directed to the subject, and various plans have been suggested.

The main difficulty appears to be that train men cannot tell when a car is opened, at what time it was opened and at what place, without stopping the train. It is clear to all railroad men, if the seals were placed where the conductor and train men could examine them before arriving at a station, before leaving or while leaving a station, or at any time, place or point upon the road night or day, no theft could be committed from the commencement of a road to its terminus. A device of this character, embodying these desired objects has been invented by James B. Calkins, of Pacific, Franklin County, Mo., and appears in Patent No. 271,475, dated January 30, 1883.

On the roof, half way from each end of the car, a small section of the running-board is converted into a water-tight trap door held in place by hinges; under this door is a hole large enough to introduce the hand and arm to push forward or backward a sliding bolt under the roof into the car door to fasten it, or out of it to unfasten it. When the bolt is thrust into the door to lock it, a small pin passed through the bolt at the arm hole will hold the bolt in place. The seal locks the trap door on top of the car, where it can be examined by the passing trainmen night or day. There is no outside fastenings on the car door of any kind; the fastenings are wholly within the car close under the roof. A car with this fastening cannot be unlocked without first going on top of the car to the center of the running board, cutting the seal, drawing the small pin, pulling the bolt out of car door, then going down the outside to enter.

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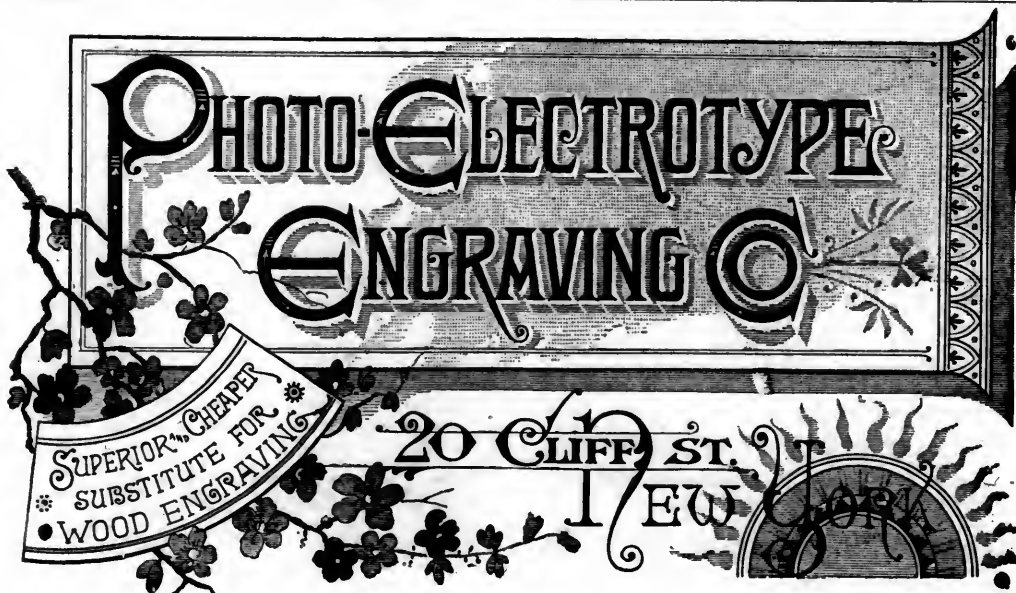
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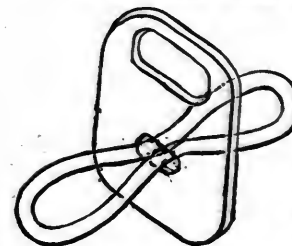
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 Pennsylvania Railroad Divs.  
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 Alt'a Div.: John P. Levan, Altoona, Pa.  
 Pitts. Div.: J. G. Stewart, Pittsburgh, Pa.  
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 N. Y. Div.: David H. Baker, Jersey City, N. J.; E. F. Bosdevex, Jersey City, N. J.  
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## TRAMWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editor. All communications should be accompanied by the name and address of the writer. The English nomenclature of "Tramway" is adopted in this department as being of greater convenience and more specific in its meaning than "street railway," though in allusion to individual organization we shall preserve their corporate titles. It is our hope to nationalize the term Tramway which is now generally used in every English speaking territory with the exception of the United States.]

### "TRAMWAY" VS. "STREET RAILWAY" ET ALS.

THE department of the AMERICAN RAILROAD JOURNAL devoted to the interests of Street Railways, will hereafter be designated as the "Tramway Department." This change is not prompted solely by our own judgment, but partly in response to a general demand on the part of street railway constructors and officials, for the introduction of the word "Tramway" in this country. We have no deep rooted predilection for British terms and phrases, and possess enough of that national quality known as "spread-eagleism," to consider the Americans far in advance of their transatlantic neighbors, in the terseness and convenience of their technical terms, but there are exceptions to this general rule, and in the use of the word "Tramway," England sets us an example that we would do well to follow, for "Tramway" is in every sense a more significant, concrete and descriptive appellation than "Street Railway" or any other term of similar purport.

What is known in England and the Continent as a "Tramway," is in America variously designated as a "street railway," "horse railroad," or "surface road," none of these terms conveying an exact or adequate definition. An elevated railway is a "street" railway and yet it is not the intention of street railways, to include it in their own category. A "horse" railroad limits the road to the use of horse traction, which is by no means universal, since many street roads employ steam as a motive power, and cable roads are fast coming into vogue. A "surface" road applies with equal truth to steam as well as to horse power roads, and is entirely without signification. The adoption of the word "Tramway" as a general designation of those organizations, now variously and arbitrarily known as "street railways," "horse railroads" and "surface roads," would obviate all trouble, and at the same time furnish the American people with a concise, brief and easily pronounced term.

It is a mistake to suppose that "Tramway" is a new word. Its use dates back to the early



part of the seventeenth century, when Tramways were used in the coal mines and de ots of Northumberland and Durham, long before railways were in existence. The early "Tram" was a simple wooden beam sheated with iron, this primitive road-bed subsequently giving way to the iron rail, when the word "Tramway" became obsolete until revived by the English for application to the passenger roads in city streets. Its popularity in this connection steadily increased, until to-day it is the general appellation in every country but the United States. With this fact before us it is high time we put aside our conservatism and adopted "Tramway" as the general name of street railway. The John Stephenson Company, one of the largest car building organizations in the world, have long since abandoned the words "horse car" and "street car," and now build "tram-cars," which adequately express their line of industry. Many organizations throughout the country have followed their example and nothing now stands in the way of the general adoption of "Tramway" as a specific designation, but an unreasonable national prejudice. This prejudice we shall strenuously endeavor to overcome, and our first step in this direction is the adoption of the title "Tramway Department." The corporate title of Tramway companies must of course be preserved, and in alluding to them by name we shall give each their proper designation, but in speaking of them generically in either our editorial or news columns we shall invariably apply to them the general term of Tramway. It is our hope that this departure will meet with favor, and that our readers will second the endeavors of the JOURNAL to aid the introduction of a practical reform that is prompted by motives of general utility and common sense.

#### The Latest Cable Road in Chicago.

THE great importance of the last constructed cable road in Chicago demanding much study, many plans for each important part were devised and patented, the best of which were adopted, some of them having been previously used in San Francisco. The results will be understood when it is stated that to complete two miles of road, consisting mainly of concrete, the following materials were used: 8,000,000 lbs. of iron, 500 tons of steel, 300,000 feet of lumber, 5,000 loads of crushed stone, gravel and dirt, with several barrels of cement to form concrete; 91,945 square yards of paving stones, 500,000 bolts, 225,000 bricks and 350 cords of rubble; all this to form two tubes, one of which was laid above the other, the top of the uppermost one being about a foot below the surface of the street, making it necessary to excavate the street about three feet. These tubes have iron frames and ribs, about sixteen feet apart, with flanges which

sustain the rails, and the frames forming the slot, the cable going through these tubes (similar, as explained in a newspaper report, to a chain pump) on wheels, and at the end of the tubes over pulleys, from thence into the engine house; first, however, going around wheels beneath the street, the rope being kept taut upon the old English plan—a weighted truck run upon an inclined plane being used for the purpose.

The clutch and break are worked from the middle of the grip car, a separate car having to be run for the purpose. This and the running of long trains are unquestionably the fruitful causes of the many accidents.

No expense was spared, and great efforts made to give it great strength and stability; but its massive weakness is apparent to all practical men. Recognizing this when a cable road was subsequently projected in Philadelphia, a modification was attempted. How much of an improvement it was, may be judged when it is stated that in lieu of all this masonry, concrete, etc., mammoth castings, in sections of 8 feet, weighing about a ton each (nearly 700 tons to a mile), were made. These castings were bolted together in their weakest part. Where several broke in the mere handling whilst laying, what may be expected when they become uneven through settling? Will they not go to pieces—their own weight contributing not a little to that result? Will it not be difficult, if not impossible, to prevent the slot getting out of line?—the least bit being sufficient to impede, if not prevent, the running of the grip.

But even admitting that they would work, and were practicable, why is it necessary to have such immense tubes merely to run a cable of about one and a half inch diameter? It is true that the cable runs and cars are propelled at Chicago, and all the objections of the tram-car are overcome, but all cities are not like Chicago; a straight line on an even plain, with no cross lines, is quite different to cities with undulation, gradients, winding roads and intersecting lines at every street.

The absurdity of the proposed plan of swinging the car around and switching off and on at every crossing, is quite apparent. It would be highly objectionable if it were practicable. As to the momentum depended upon to send the (one) clutch along when the car takes its gyration, to the amusement, no doubt, of the young and giddy (at least as long as the novelty lasts), and the constant terror of the old and feeble, what becomes of it if the car happens to be stopped by a passing vehicle or other cause, just about the time the important movement is to take place? The able-bodied passenger would, perhaps, be depended upon to aid the momentum in such an emergency; but called upon too often, he might object to have his good nature too severely taxed, and be unwilling to pay and, as the sailors say, work his passage too.

In the Hunt system of cable traction, the tube is of cast iron, with movable rolled iron or steel tops, bolted on for convenience of removal or renewal, that being the only wearing part of any consequence. It is laid upon the ordinary cross-ties, and secured by dog-spike

or braces; the very desirable elasticity is attained, as well as great strength; breaking tensile and crushing achieved. Its durability is obvious.

The slot formed by the movable tops is V shape, about  $\frac{3}{4}$ -inch at top. Anything entering however tightly, is easily ejected, superior in this respect to the hard, slippery, rigid castings formerly used with the pressure towards the aperture, and forming a very good trap to catch the cork of a horse's shoe and loosen it, if it does not jerk it off entirely, and as likely as not, take the hoof along with it; such catastrophes causing the sportsman, who values a good horse above anything in this world, not even excepting his wife, to use very forcible, if not polite language, and many expletives (unless he happens to be a preacher), and resolve to make the company pay the damages, cost what it might. It goes without saying that these serious annoyances are impossible with the lithe movable tops, whilst the corrugations upon them make the travel as pleasant as upon any ordinary pavement.

This tube has two channels, the upper one conforms to the shape of, and is just large enough for the running of the cable,  $4\frac{1}{2}$  inches in circumference, and the manipulation of the clutch ( $4\frac{1}{2}$  inches long by  $\frac{1}{2}$ -inch thick), made of steel with arms similar to blacksmiths tongs, jaws and joints being within the channel; certainly the strongest ever devised, they will stand any strain, no obstacle can block them, the harder the pull the stronger they hold. Along the bottom of the channel, at suitable intervals, rollers on pivotal spindles are placed, thus obviating the rapid wear from dirt hitherto experienced. On these rollers the cable is run in any direction—on, on, onward in its monotonous course, no difference how winding or tortuous it may be; quietly, yet vigorously and irresistibly, unlike the one described as going and, returning in the same tube on the chain pump principle. It is kept on its circuitous course, making revolution, after resolution ever onward, like the Calvinists' theory of the rewards of the righteous or the punishment of the damned—it has no end.

When the iron hand (the clutch) is not, with its powerful and tenacious hold, grasping the cable, it runs free from and clear of it, thus all wear and tear of the cable is prevented, and it is permitted to go wherever desired upon its rollers, facilitating the crossing of other cable roads, steam roads and bridges, turning curves tauting and tensing the cable, which being done by running the cable below at very little deflection over and under wheels, but small quantity, if any, more power is required. This cannot be done by any other cable system in existence; the grips of which having to be always attached to the cable prevents its relinquishment, or, if at all, very imperfectly, and not without a great deal of trouble.

The lower channel is used for drainage, for which it is admirably adapted; being somewhat larger than the cable channel, and similar in form, it is ample to carry off all water that can enter it through the slot. It can be readily cleaned by flushing it at head of grades, or by rattling through it a small cable with knots or knobs on, to which swabs, brushes or scrapers

can be attached, which soon clear it of all mud and dirt, depositing it in suitable receptacles, provided at proper intervals for it; these can be cleaned out whenever necessary. A trip or two over the road at night of a brushcar can keep the road clean; any dirt deposited upon the top of the tube at any time can be easily removed by the brakeman simply raising a lever, which actuates brushes carried upon each car. All water is turned from the slot, the construction of the tube being such as to have that effect, except in times of flood, when it is always troublesome, the most commodious culverts being inadequate to carry it off—an obstruction, this, to the working of the cable road, it may be charged. Not at all; it is viewed much as the good people of Philadelphia regard the advent of a baby in the Alms-house—certainly unwelcome, yet it is no hindrance, could do no damage, and cannot last long. The tubes are firmly and securely joined by fitting the end of one section within that of the other, the movable tops being lapped so that no two joints need ever come together, and effectually preventing the slot getting out of line.

The perfect control and great simplicity of Hunt's system will be understood when it is stated that the brakeman is stationed on the front platform of the ordinary car, no clutch or brake machinery in the middle being necessary; he turns a wheel (like the brake-handle of a steam car) the least bit. This raises the brakes (which bind, at top and sides of the wheels), and simultaneously closes the clutches, clamping the cable securely and without possibility of failure. To better comprehend this movement, imagine two bars, running from end to end of the car, upon each end of which both the arms of the clutches and levers of the brakes are secured. When the brakes are raised the arms are thrown apart, and the clutches close upon the cable. At the same time the car starts, which actuates one or two plungers working into air-cushions, effectually preventing jolting or jerking. Reliance is not solely placed upon these plungers, however; springs may be also used. The clutches are also provided with rollers, which act when the clutches first close upon the cable, but are thrown off when the full force is put on, and they act against the sides of the channel; they are also useful when it is necessary to go slow in a crowded thoroughfare, and when the car is permitted to go down grade faster than the cable to make up lost time. A great desideratum which will be appreciated is, the cable can be run upon different speeds upon the same road, in most cities it being impossible to make as fast time in some parts, owing to the crowded condition of the streets, as in others.

Enough has been said to give an insight into the practical workings of the cable roads, but lest there still be some doubting Thomases (there always are, under any and every circumstance), we submit the following description, by a reliable and competent authority on the spot, as to some of the defects already discovered in the actual working of the Chicago cable. Serious as they are, however, they are small in comparison to those yet to be encountered, when attempts are made to cross it with other cable lines.

The *American Engineer* (Chicago) says, "Mishaps in the shape of ruptured cables and trouble with the grip causes more or less comments and annoyance of the cable road. The trouble of turning street corners is a difficult problem to solve. The cable at those corner turnings is wearing badly and a strand in it frequently gives out. It is an unsolved problem this turning street corners by wire traction, and will necessitate much mechanical ingenuity to overcome the varied opposing elements to a successful issue." Quite right Mr. Editor, but the problem has been solved as is explained in this book, all obstacles are surmounted and all difficulties are overcome.

Having clearly shown this, another matter of moment to city railroad men, and one of much importance, is that the first cost is very much less than any other plan, which will readily be understood from what has been said; it can be run at correspondingly small cost, and it is much more durable. It is simplicity itself, both in its construction and working, and a great triumph of mechanical skill. It is the opinion of prominent city railway officials, whose judgement commands respect, who have given the subject the profound consideration its importance demands, and who have expended much time and money in the vain hope that in the various motors—steam compressed air, &c.—a substitute for horses might be found all of which having proven failures, that motors carried upon the cars would not do on city tramways, and that the only practical system is the cable road perfected.

#### TRAMWAY NOTES.

CABLE traction is shortly to be experimentally introduced by tram-way companies in New York City. It will probably first be tried upon the Tenth avenue road, from Manhattanville to High Bridge. The president of the Third avenue road has thoroughly investigated the Chicago cable road with a view to adopting the plan here. Construction of an experimental road will probably be begun this spring, and if the system proves advantageous it will probably be adopted upon Third avenue. The cable system has also attracted considerable attention in Baltimore, and the corporation counsel of that city has expressed the opinion that the municipal authorities have the power to permit the introduction of cable traction by those tram-way companies whose charter does not specify that horse traction shall be employed. We continue this week the discussion of cable traction for tram-cars, and give a description of the Hunt system as employed in the last completed cable road in Chicago. This description is taken by permission from a small pamphlet entitled "Cable Road vs. Horse Car," by Royal Tees, in which the Hunt system is pronounced as the "Cable road perfected."

A MEETING of the stockholders of the new Central Street Railway Co. of Baltimore was held last week to elect directors for the ensuing year. The board has since met and organized. Mr. Welsh, who has been the president since the inception of the road, says the business for the four weeks that the cars have been running

has been larger than they had expected. The company has twenty-six cars, and the start was made with ten. By April 1 every car will be in service, at three and five-minute intervals, with all-night cars later on.

At a meeting of the stockholders of the Sixth Avenue Street Railroad Company, held at the office of the company at Sixth Avenue and Forty-third street, this city, on the 13th inst., the following directors were elected: G. W. Burnham, Jonathan Thorne, T. R. Butler, Abram R. Van Nest, Henry Demarest, William Bryce, William Y. Mortimer, Albert W. Green, Theodore E. Macy, Abijah Curtiss, Charles G. Landon, Samuel Thorne and Henry S. Moore.

THE New York Underground Tramway Company has mortgaged its property and franchises to James H. Fay, as trustee, to secure the payment of debts amounting to \$39,358.53. A judgment foreclosing the mortgage and ordering the sale of the property, etc., was entered in the Superior Court last week.

THE Brooklyn City and Newtown Tramway Company are now running all-night trips and have also put ten new cars on the DeKalb avenue line. These cars are finished in the interior with panels of inlaid wood, and are heated by steam pipes running under the seats.

A DIVIDEND statement of Tramway Companies may be found every week in the preceding pages of the JOURNAL. It shows the amount of stock outstanding, the Dividend Periods, and the date of the last dividend of each organization.

THE tram-car horses are groomed by steam at the Metropolitan Railroad stables, Washington, D. C. Cylinders of brushes revolve against each side of the horse, and the animal comes out well brushed.

A STEEL-WIRE rope 1½ inches diameter, 20,440 feet long, and weighing 51,000 pounds, has been shipped from Trenton, N. J., to San Francisco, for a tram-way railroad.

WORKMEN are laying the steel car rails on the East River Bridge. The iron skeletons of the stations at the termini are nearly completed.

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## NEW INVENTIONS.

## TO INVENTORS AND PATENTEES.

THIS department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Tramways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full descriptions of those most useful and important are published free of charge.

Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

## A WORD OR TWO OF EXPLANATION.

[We reprint the following from our issue of Feb. 24, and shall keep it standing at the head of this column until the purposes of the Department of New Inventions are fully understood by all our readers].

THE department of New Inventions is conducted in the interests of our readers and of inventors of devices applicable to Railroads, Steam Navigation, Mining, Street Railways, etc. We believe that full descriptions of new and patented appliances of this nature will prove interesting to our readers, and cannot fail to bring the inventor's device into the prominent notice of that class of persons among whom he looks for the heaviest sales and royalties. No charge is made for the insertion of such description in this department, but there is a *sine qua non* requisite in all inventions before we will devote space toward their publication. They must be *new* and *valuable*. It is not our intention to offer a free advertisement to any person, and the inventor whose invention is given full description in the AMERICAN RAILROAD JOURNAL must have produced something of importance and value.

We have not established this department in a spirit of philanthropy, and do not lay claim to any special generosity in publishing descriptions of new inventions free of charge. Our aim is to increase the number of both our readers and advertisers. The continued publication of valuable patents will, we think, attract readers who are interested in the problems connected with railroad and steamboat management, mining, the management of street railways, and the like, while the value of an advertisement in the columns of the JOURNAL will ultimately be apparent to inventors of appliances tending to solve these problems. It is purely a business transaction, and we do not wish inventors to feel themselves under any

obligation to us through our description of their patents. If they choose to advertise or order a number of copies of the AMERICAN RAILROAD JOURNAL containing such descriptions, we would be glad to have them do so, and may possibly ask them for an advertisement or an order, in the form of a fair business proposition, but they are under no obligation to accept our advances. In other words, there is *nothing* obligatory on their part, but at the same time there is nothing obligatory on our part either. We reserve the liberty to ignore any invention whose description is sent us without assigning any reason for such action, and if our opinion and that of the inventor as to the utility of the invention chance to differ, we propose to be guided solely by the former.

The cause of these few words of explanation lies in the fact that many inventors seem to recognize an obligation on our part to describe in full their inventions, while they in return do not feel compelled to go to any expense in order to acknowledge such publication. It would be manifestly impossible for us to publish full descriptions of all inventions of this class, when the weekly list of new patents of the sort numbers fifty or more. Every new invention of the character mentioned above is noticed in our weekly list of patents, and we shall further endeavor to give a brief description of all, but in selecting those for extended notice, we are guided simply by their importance and general utility. Our advertising pages are open at reasonable terms to all inventors and holders of patents, but this department is entirely our own, and we must be pardoned if we choose to conduct it in the manner we deem best. If inventors desire a medium through which valuable inventions of a certain class are brought into public notice free of charge, they will aid us in this direction by subscribing to and advertising in the RAILROAD JOURNAL, but they should do so solely in a practical business way, not influenced by any feelings of obligation, while none exists upon their part so to do, nor upon our part to publish any description that is forwarded us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Tramways, Machinery, Etc.

BEARING DATE OF FEBRUARY 27, 1883.

- 272,849. Lathe: John Birkenhead, Mansfield, Mass.  
 272,850. Railroad-Tie: Thomas Breen, Knowlton, Pa.  
 272,851. Railway-Signal: Thomas Breen, Knowlton, Pa.  
 272,860. Steam-Pressure Gage: Geo. H. Crosby, Somerville, Mass.  
 272,861. Shaft-Hanger: Hilien C. Crowell, Erie, Pa.  
 272,869. Self-Lubricating Bearing: Thomas R. Ferrall, Boston, Mass.

- 272,879. Valve: Sidney W. Hoag, Sr., New York, assignor of three-fourths to Henry B. Piper, same place.  
 272,911. Brake-Shoe: George J. Shimer, Freemansburg assignor of one-half to Samuel J. Shimer, Milton, Pa.  
 272,926. Safety-Valve: Henry C. Wilder, Ashby, Mass.  
 272,930. Smoke-Consuming Furnace: Harvey R. Wolfe, Louisville, Ky., assignor to Charles A. Wolfe, Thomas Brennan, W. Garnett Munn, and John Teamy, same place.  
 272,947. Clutch: William D. Ewart, Chicago, Ill., assignor to the Link-Belt Machinery Company, same place.  
 272,949. Vibrating Propeller: Augustus M. Freeman, Ocean Grove, N. J.  
 272,952. Fare-Box: James F. Goodrich, Boston, assignor of one-half to John E. Russell, Leicester, and Alexander Pope, Boston, Mass.  
 272,964. Rotary Engine: Mortimer G. Lewis, Lowville, N. Y.  
 272,967. Railway-Wagon: John McCullough and William Cook, Glasgow, County of Lanark, Scotland, assignors to William Cook & Sons, same place.  
 272,971. Nut-Lock: Joel Moore, Greenwood, assignor of one-half to Walter A. Chalpent, Cambridge, Ohio.  
 272,974. Collar for Shafting: Frank I. Pearce, Chicago, Ill., assignor to the Link-Belt Machinery Company, same place.  
 272,979. Car-Coupling: Wm. N. Richards, Lyons, New York.  
 272,987. Traveling Crane and Derrick: John Thompson, Bucyrus, Ohio, assignor to the Bucyrus Foundry and Manufacturing Company, same place.  
 273,012. Fire-Pot for Boilers: Edward P. Bates, Syracuse, N. Y.  
 273,026. Boiler-Cleaner: Genry A. Chapman, Strawberry Point, Iowa.  
 273,029. Nut-Lock for Rail-Joints: Joseph L. Clingman, Cynthiana, Ky.  
 273,045. Car-Coupling: Chas. M. Ezell, Baskinton, La.  
 273,051. Dumping-Car: Laurence Fitzsimmons, Allegheny, Pa.  
 273,053. Car-Brake: Edward Foakes, Cardiff, England, assignor to George Hopkins, same place.  
 273,081. Tightening Device for Belt-Pulleys. Noah W.  
 273,084. Feed-Water Heater: John J. Hoppes, Springfield, Ohio.  
 Holt, Buffalo, N. Y.  
 273,099. Steam-Boiler Furnace: Frank H. Kane, Riverside, assignor of one-half to William Kruse, Sedamsville, Ohio.  
 273,104. Car-Coupling: Henry Keller, Corpus Christi, Tex., assignor of one-half to George K. Page, same place.  
 273,112. Railroad-Crossing: David Lippy, Mansfield, Ohio, assignor of two-thirds to Thomas Huber and William Huber, same place.  
 273,126. Steam-Engine: Henry Monk and William Monk, Hadlow, Quebec, assignors of one-sixth to John A. Seward Dunscomb, Quebec, Canada.  
 273,141. Stock-Car: Samuel Pavay, Detroit, Mich., assignor of two-thirds to Wm. K. Muir and Allen P. Cameron, same place.  
 273,148. Car-Coupling Link: John W. Purslow, Durango, Col.  
 273,155. Car-Step: Harry C. Reagan, Jr., West Chester, Pa.  
 273,158. Lubricator: J. Vincent Renchard, Windsor, Ontario, Canada.  
 273,162. Rotary Engine: Charles M. Sanderson, Winchendon, Mass., assignor of one-half to George N. Goodspeed, same place.  
 273,167. Car-Coupling: Albert T. Schultz, Zanesville, Ohio.  
 273,171. Steam-Engine: John B. Shaffer, Kearney, Nebr.  
 273,197. Life-Boat: Frank Vaughan, Elizabeth City, N.C.  
 273,214. Railway-Brake: John Woods, Melbourne, Victoria.  
 273,218. Signal. Joseph H. Bacon, Charlotte, Mich.

## RE-ISSUE.

- 10,291. Car-Coupling: Clinton Browning, Shousetown, assignor of one-half to Lindsay & McCutcheon, Allegheny; said Browning and Lindsay & McCutcheon, assignors to James H. Lindsay, Trustee, Allegheny City, Pa.



**Car-Coupling.**

COLUMBUS B. TUCKER OF ANGERONA, W. VA., AND  
JOSEPHUS TUCKER OF COOLVILLE, O., PATENTEES.

THIS device is an automatic self-coupler without spring or lever, and consists of a draw-head with a beveled opening, and with a small socket at the rear and upper end of the main socket in which to insert the coupling link, raising its projecting end to meet the draw-head of the approaching car. The coupling is also furnished with an upright tube in which to place the coupling-pin, to which a small chain is attached extending to the top of the car, and under this tube a perforated slide is placed in such a manner that at the contact of the draw-heads of two cars, the pin drops automatically in position. The object of the invention is to avoid the necessity for train men to stand between cars in coupling them, and thus expose themselves to injury, while at the same time cars using the device can be readily coupled to others using the ordinary coupling link and pin.

**Valve-Gear.**

RUDOLPH M. HUNTER OF PHILADELPHIA, PA.,  
PATENTEE.

THIS invention has reference to valve-gear for steam-engines; and it consists in a combination of spur-wheels in gear with a pinion on the crank-shaft and adapted to reciprocate the valve-rod; further, in the arrangement of such gear mechanism with means to so alter the positions of the parts with relation to each other that the engine may be reversed or the point of cut-off changed. The object of the device is to dispense with the usual and expensive link-motion and eccentrics, and substitute therefor a simple and equally efficient spur-wheel mechanism, thereby greatly reducing the cost of manufacture. This improvement is particularly adapted to portable and traction engines used for operating farm machinery. The valve-gear is now being manufactured by Frick & Co. at Waynesboro, Pa., the capacity of whose works is estimated at 1,000 engines per year. They are using the device in preference to link-motion.

**Drilling Apparatus.**

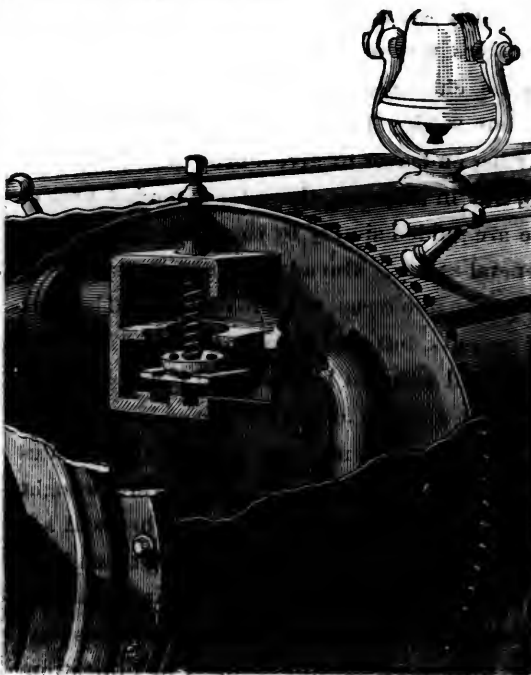
WILLIAM L. SAUNDERS OF JERSEY CITY, N. J.,  
PATENTEE.

THIS invention consists of a tube or hollow cylinder of two or more telescoping sections, surrounding a steel drill of the construction commonly employed for submarine work. The lower section is provided with a conically tapering extension, which in turn is united with a straight tube having an internal diameter preferably slightly exceeding that of the hole formed by the drill. Within this tube and parallel with the shank or steel of the drill extends a small pipe, terminating above the bit of the drill, and arranged to convey a continuous stream of water thereto. At a suitable distance above its lower extremity the conically tapering sec-

tion is provided with a lateral opening, through which the debris accumulating within the lower extension is discharged. The means for effecting this discharge consist of a suitable steam or water pipe extending downward along the inclosing cylinder or tube to the conical section thereof, into which it enters, terminating in a nozzle concentric with the discharge-opening, and constituting a device known as an "ejector." By forcing a jet of steam or stream of water downward through this pipe and out of the discharge-opening the water received through the pipe terminating at the bit of the drill and the accumulations forced by the same into the conical section will be carried out through the discharge-opening.

**The Higdon Traction Governor.**

THIS device is the invention of J. C. Higdon, of Kansas City, Mo., and is designed to prevent the slipping of locomotive driving wheels. It consists of placing in the steam pipe of a locomotive what may be termed a "check" valve, which closes automatically by the excessive flow of steam when the driving wheels slip upon the rails. This valve may be located at any point in the steam pipe, but preferably at the fork in the smoke box as shown in the accompanying illustration.



The valve is constructed of the same area as the throttle-valve, and is connected with the throttle-lever, thus insuring a simultaneous action with that of the throttle. This connection is made by a rod running through the dry pipe, the valve end being jointed to a wedge which works in guides cast in the valve chamber, and this rod is so attached at its other extremity that when the throttle is opened, the wedge is proportionately withdrawn, lowering the table on which the valve rests, while closing the throttle causes an opposite effect upon the table. The connection may also be made by running the rod outside the boiler, combining with a bell-crank and a shorter rod extending through a hollow screw, the manner of connection being more a question of preference than of importance. The valve is pressed down on the table by a spring as shown in the illustra-

tion, which is adjusted by a screw extending out through the valve chamber and boiler shell, and the pressure of the spring upon the valve is of about the same force as that exerted by the steam on the lower side, so that the valve will always be in comparative equilibrium. As a result, when any undue rush of steam takes place, the valve closes automatically, checking the flow of steam to the steam chests, and consequently the slipping of the driving wheels of the engine is prevented. After this end is accomplished, the valve opens instantaneously by reason of the pressure of steam which passes up through the valve openings, making the pressure in the cylinders the same, or nearly the same, as that in the dry pipe. The valve should be made as light as is consistent with the strength required to withstand the steam pressure employed. The Eastern agent of the Higdon Traction Governor is L. M. Shute, of 311½ Walnut street, Philadelphia.

**A New Globe Valve.**

GEORGE REIMANN, of Quincy, Ill., has invented a new and useful improvement in globe valves, upon which letters patent have been granted him. His invention has for its object the production of a globe valve both air and steam tight, and having the capacity for the removal of these special parts which are the most exposed to wear without the necessity of renewing the remaining parts. Its advantages to manufacturers and others using steam, water or other liquids, both as regards the saving of time and expense, are marked. Many experts have given the opinion that the new globe valve is a great improvement upon all precedent contrivances of the same nature, and that when once it becomes known, it will take the lead in preference to all others.

In this ingenious improvement the shell or case of the valve has a horizontal portion provided with threaded ends, by means of which connection is made with adjacent pipe-lengths, and the vertical portion of the shell or case has a plain interior surface, excepting at the upper end, which is threaded. A thimble fits snugly within the said vertical portion, which is provided upon each side with an opening which coincides, when the thimble is in place, with the space in the horizontal portion of the case or shell, which is provided for the passage of the steam. A projection upon the exterior surface of the closed bottom of the thimble is provided with screw threads, and a screw-nut is adapted to engage with the threads for the purpose of drawing the thimble tightly into the casing and holding it securely against vertical movement. A ring has vertical projections which fit into corresponding recesses in the upper edge of the thimble and the horizontal projections before described. By means of the vertical projections, the ring is so united to the rigidly held thimble as to be incapable of a revolving movement. By means of the horizontal projections a plug or finger, to be hereafter described, is also held against revolution. This plug or finger consists of a conical block which is provided with an internal left-handed screw-thread and with an external recess which extends in a vertical direction. When this plug or finger is in

position its recess coincides with the horizontal projections of the ring before described, so that it is accurately guided in its vertical movement. A cap, resembling a hollow cone in its general form, is provided below with screw-threads adapted to engage with the screw-threads upon the upper end of the vertical portion of the casing, and at its upper end, in its interior space, with a bearing shoulder and screw-threads. Next, a screw-stem consisting of a rod having at one end a threaded portion is adapted to engage with the corresponding part of the plug or finger described above, and at the other end, with the usual handle-wheel. A shoulder near the center of the rod referred to in the last sentence, is adapted to bear upon the shoulder of the cone-shaped cap described above, when the parts are in place. The invention is completed with the addition of the usual threaded sleeve or collar of the screw-stem, by means of which the opening into the top of the cone-shaped cap is closed.

From the above account of its various parts, the expert will understand quite readily the operation of the invention. By turning the handle-wheel the bearing shoulder of the stem is made to revolve upon the bearing shoulder of the cap. By the revolution of the threaded portion of the stem the threaded plug or finger, which is held against revolution by the extension of the horizontal projection of the guiding ring into its recess, is caused consequently to travel in a longitudinal direction to open or close the passage-way through the cock. By simply grinding together the interior surface of the thimble and the exterior surface of the plug an air and steam tight joint can be obtained. By grinding together also the exterior surface of the thimble and the interior surface of the vertical part of the shell or case of the valve, a tight joint may be obtained. This thimble and plug also may be readily replaced when worn, without renewing the other parts.

The following are among the best features of the invention: It provides against the need of disconnecting the valves from pipes in case of leakage caused by wear or otherwise, as those parts (the thimble and finger) which alone are exposed to such wear, may be renewed at any time without the renewal of the remaining parts, thus putting the whole in a shape as good as new. Owing to the thimble and finger being entirely independent of the outer shell or casing, this may be manufactured of malleable iron, thus greatly reducing the cost of material. Lastly, the finger being ground together with the interior surface of the thimble, an entirely air and steam tight joint is obtained.

Persons interested in the above brief description, should communicate with the patentee, addressing him as in the first sentence of this article.

SEVERAL experiments were recently made in the workshops of the Northern Railway of France at Paris on the system of Marcel Deprez, for transporting electrical force over great distances. A dynamo-electric machine transported a force equal to about three horse power a distance of twenty kilometres by means of a single ordinary iron wire, and afterward ten horse power over a distance of thirty-five kilo-

metres. A kilometre is 3,280 feet. Hitherto it has not been thought possible to transport a force beyond two kilometres with a minimum loss of fifty per cent, though thick copper wires were used as conductors. Many eminent persons attended the experiments, among them M. de Freycinet, himself a distinguished engineer.

An automatic electric mechanism that is designed to announce the approach of railroad trains has been tried on what is called the Paris-Lyon-Mediterranee line. It consists of a box filled with mercury placed under the rail at the required distance from a bell. When a train passes over this box the mercury is so agitated as to form contact with the wire communicating with the bell, and thus make it ring.

Messrs. JOHN B. DAVIDS & Co., of New York, have just succeeded in perfecting a chemical writing fluid, in which, while the parts are in perfect combination, the specific gravity is but  $3\frac{1}{2}$  degrees or  $1\frac{1}{2}$  degrees less than that of Messrs. P. & J. Arnold, of London, England, which, heretofore, has been considered the most limped writing fluid produced.

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## TO INVENTORS

—AND THE—

## RAILWAY SUPPLY TRADE GENERALLY.

Parties having New Patents of any description, which promise to be of value to the Railway trade, are cordially invited to correspond with the undersigned. My practical experience in all details of the trade enables me to judge promptly whether new patents really deserve to be classed among the improvements or not, and advice will be freely and frankly given in every case. When found to possess real merit I will be pleased to assist the inventor or owner in bringing the articles into use.

I wish to be conversant with everything connected with the general Railway Supply Business, and have no old foggy notions. The trade is young and always progressing, and it is my ambition to be abreast of the times—always ahead when I can—in the rear, NEVER. Whenever new inventions recommend themselves to my judgment and experience as improvements, I will find parties to manufacture on royalty or make liberal arrangements for the introduction of the same to the trade as agent.

Trusting, after due consideration of the above matter, you may deem proper to communicate with the undersigned, I remain, awaiting your further pleasure,

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## SAWS AND FILES.

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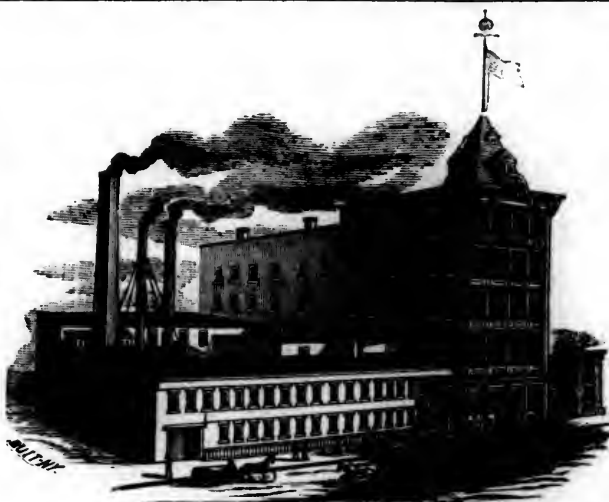
THE UNRIVALLED PRODUCTION OF THE E. M. BOYNTON SAW AND FILE COMPANY—THE RECENT RE-ORGANIZATION.

For a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. Boynton, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" law, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion; the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth

Not one in a thousand failed to give satisfaction.

The First Award of Australia has been added to the Centennial Awards.

The 12-inch log at bottom of this picture was sawed off by two men by hand in 7 seconds before Commissioners of every country and the Emperor of Brazil.



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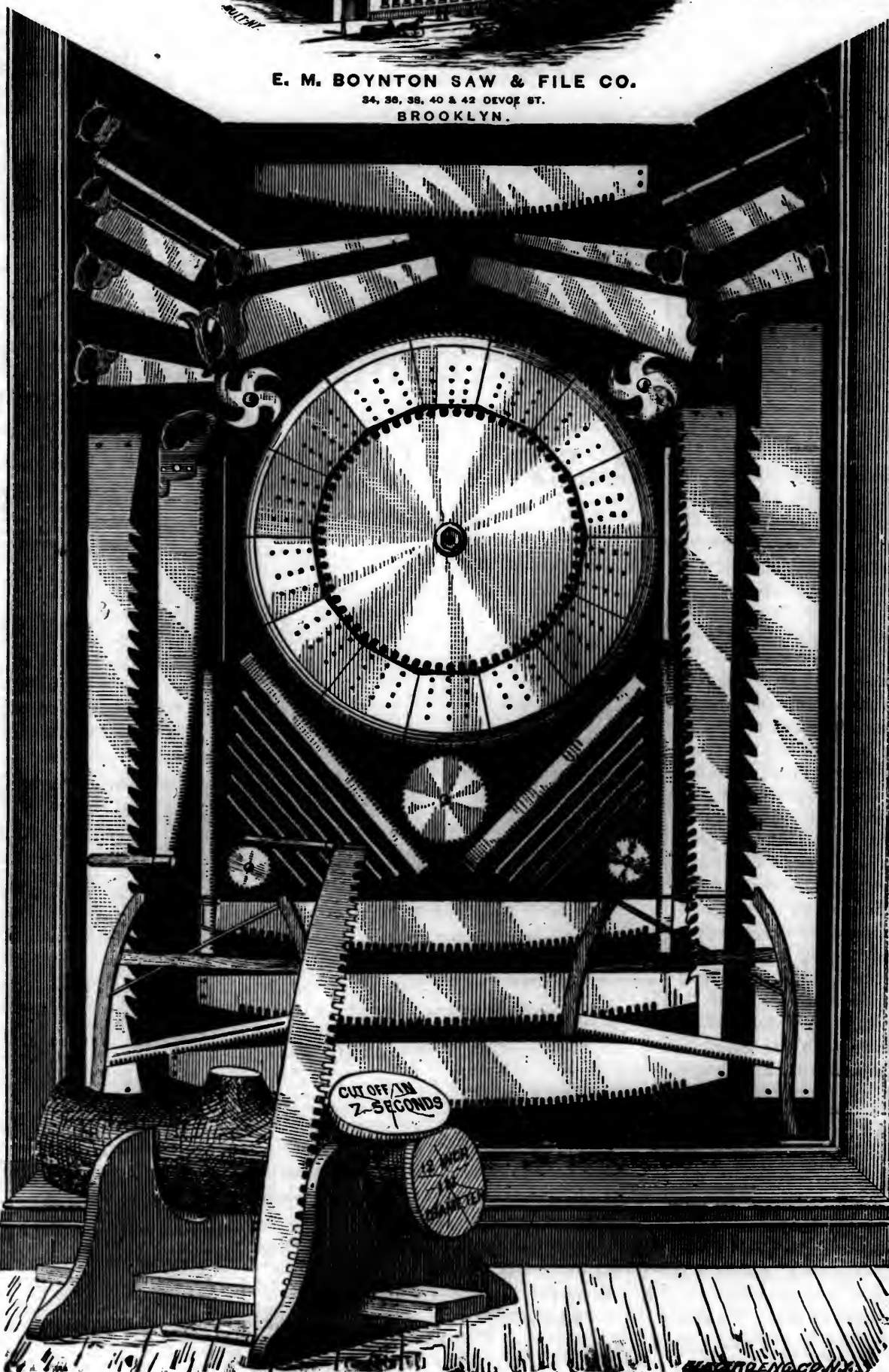
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edge being given with whetstone—saving of friction, as well as files, steel, strength and time. 3d. Double teeth—are stiffer, less vibration. 4th. Consequently, may be and are gummed longer, saving expense and frequent repairs. 5th. Are stronger than any other. 6th. Direct cutting (upwards) avoids grit, divides resistance, relieves the pressure and wear on point of teeth—avoiding the grinding, weighing and clogging of old style saws. 7th. No waste of power, as in the old scratching system, the cutting being direct, uniform, economical and continuous. 8th. In direct cutting, edge holds longer than if dragged over the timber. 9th. It is the front cut of the hand saw cutting both ways. 10th. This saw cuts with less friction, much easier and faster than any heretofore known, while more simple than any other patent saw. The "Lightning" combines the two principles in one tooth. One point of M follows while the other is cutting, which regulates the feed, and enables the teeth of the plow or vertical form to be used for both cross cutting and slitting. This patent tooth is as simple as any hand-saw tooth to sharpen. Boynton's saws were effectually tested before Judges at the Philadelphia Fair, July 6 and 7. An ash log, eleven inches in diameter, was sawed off, with a four foot "Lightning" cross-cut, by two men, in precisely six seconds, as timed by the Chairman of the Centennial Judges of Class 15. The speed is unprecedented, and would cut a cord of wood in four minutes. The representatives of Russia, Austria, France, Italy, Spain, Belgium, Sweden, England and several other countries were present, and expressed their high appreciation. Many of the leading saw manufacturers of the world were present, but not one accepted Mr. Boynton's \$1,000 challenge. The M principle is applied to saws of various kinds and for all sorts of purposes. In consequence of the practical value of the patents taken out by Mr. Boynton the earnings of the factory have multiplied five-fold in five years, and there is no doubt that an even more rapid growth will be recorded in the future.—*New York Scientific Times and Mercantile Register*, Feb. 3, 1883.

This Company also manufactures the **Noon-Day Stove Polish**, so rapidly coming into favor.



# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Tramways.

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send to us for use elsewhere within these columns. He  
respectfully invites information concerning Railroad  
matters generally, Mining, Banking, Finance and Manu-  
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ALL correspondence, communications and contri-  
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JOURNAL CO."

We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing us with  
any items of news which may come to their knowledge,  
and are of a suitable nature for our columns. It is our  
intention to publish weekly full and accurate informa-  
tion regarding those enterprises and industries to which  
the AMERICAN RAILROAD JOURNAL is devoted, and to  
effect this end we solicit the co-operation of readers in-  
terested therein. We aim specially to record all new  
railway enterprises in the United States and Canada,  
and to note the progress of construction on all new roads  
and extensions; and we request those concerned in rail-  
way building to give us early information concerning  
the above, that our reports may be as complete as pos-  
sible.

Correspondence and contributed articles are also re-  
quested for our special departments devoted to Finance,  
Commerce, Street Railways, and New Inventions. All  
communications should bear the name and address of  
the writer, not necessarily for publication, but to insure  
the editor's attention.

### WANTED—MORE TRAINS.

THE tendency of railways is creative. Their  
primary object is to develop the towns  
and cities through which they run, by affording  
them facilities for the rapid transportation of  
passengers and freight; but careful considera-  
tion is also paid to the character of the territory  
crossed by railways. Many towns in the vicini-  
ty of large railway centers owe not only their  
growth and progress to their facilities for trans-  
portation and communication, but their exist-  
ence itself. Nothing is more common than for  
railways to erect stations at points along their  
lines that are conspicuous for the fertility and re-  
sources of the surrounding country and the prox-  
imity to commercial and manufacturing centers,  
while there is not as yet the vestige of a town.  
English and other foreign tourists in traveling  
through this country frequently comment upon  
the fact that the towns on many of our railways  
consist of a single building, and that the rail-  
way station, which statement is undeniably  
true and causes great amusement in foreign  
countries; but let the same tourists travel over  
the same road after the lapse of a few years  
and they will find a growing town where the  
solitary station stood before. The conditions  
for the growth and settlement of a town at cer-  
tain points being favorable, the towns have  
sprung up. This sequence of cause and effect  
is found in America alone and accounts for the  
vastness of her railway enterprises. In this  
country the construction of railways leads more  
to the settlement and growth of towns than  
does the existence of towns to the construction  
of railways, and at the present time many rail-  
ways derive their principal revenue from the  
very towns and cities they have themselves  
created and which have sprung into existence  
simply through their facilities for communica-  
tion with centers of population and business.

In view of this fact it is singular that railway  
companies will ignore the wants of towns and

villages along their lines and neglect to provide  
them with adequate means of travel. Many  
companies in arranging their train schedules,  
appear to be guided more by the present popu-  
lation of their station-towns and the average  
daily travel therefrom and thereto, than by the  
probable growth and progress of these places  
were the traveling facilities sufficiently great to  
encourage an increase of population.

Cases of this sort are numerous and many in-  
stances could be cited to illustrate the result of  
this neglect of railways to base the traveling fa-  
cilities for towns upon their future possibilities  
and not entirely upon their present demands.  
An example occurs to us in the case of Perth  
Amboy, N. J., which will serve to illustrate the  
effects of this neglect.

Perth Amboy is a growing city of six thousand  
inhabitants, situated at the head of Raritan  
Bay, in Middlesex County, N. J. The beauty of  
its location and its proximity to New York, the  
distance being less than twenty-five miles, cause  
it to be regarded favorably as a place of resi-  
dence by many business men of this city. The  
possibilities of its growth are great, but the one  
insuperable objection made to adopting it as a  
home by those who desire suburban residences  
is the lack of means of communication with  
New York and other adjacent cities, and this  
objection is made in the face of the fact that no  
less than five railways pass through Perth Am-  
boy. The Pennsylvania Railroad has a branch  
line extending from Rahway, and the New Jer-  
sey Central one from Elizabethport, while Perth  
Amboy is the southern terminus of the Staten  
Island Railway, the northern terminus of the  
Long Branch Railroad operated jointly by the  
Pennsylvania and Central roads, and the eastern  
terminus of the coal branch of the Lehigh Val-  
ley road. Despite these railway facilities which  
are not possessed by many cities of a hundred  
thousand inhabitants, Perth Amboy is utterly  
cut off from the outside world at six o'clock p.  
m. Persons doing business in New York and



residing in Perth Amboy must conclude their transactions in the latter city before six or spend the night therein; while if once placed in Perth Amboy after 6:45 P. M. there one must stay until the following morning. With five railways passing through the town there is not a single evening train running to or from Perth Amboy, and the inconveniences resulting from this lack of train accommodation are so conspicuous that business men who attempt the experiment of living in Perth Amboy and traveling to and fro daily, fast become disgusted and generally abandon the effort after a few months' trial. The railway companies could with little trouble and expense provide the town with ample evening train facilities. The main line of the Pennsylvania road is but six miles distant and that of the Central but ten. Evening and midnight trains upon these main lines pass within a few miles of Perth Amboy every night, and single cars could be run from Rahway and Elizabethport on the branch roads, connecting at these places with the main lines of the Pennsylvania and Central at convenient intervals throughout the evening, which action on the part of the two railways would result in an influx of permanent residents anxious to escape the high rents and contracted dwellings of New York, yet unwilling to incur the inconveniences attendant upon the entire lack of communication with other places after an abnormally early hour in the evening.

What is true about Perth Amboy is also true of the other towns upon the same branch lines and of a vast number of places on other roads. There is absolutely no traveling facilities given by the railway companies other than the necessary means of travel at the usual business hours. No account is taken of unforeseen delays and detentions, and the occasional diversions which the residents of small towns may desire and can only obtain by remaining in the larger adjacent cities until late in the evening. It is claimed by the railways that even should they run evening and midnight trains to the smaller and more remote towns upon their lines, they would meet with little or no patronage by the inhabitants. Possibly not at first, but the increased facilities for night travel would undoubtedly attract a number of persons to adopt these towns as places of residence who would not dream of doing so under the present arrangements. The railways would not have to wait for the towns to grow but could themselves force the growth as a gardener will produce plants ahead of season by the application of artificial means. As it stands now, the increase of commuting residents in that class of towns of which Perth Amboy is an example, scarcely more than cov-

ers the loss which is constantly occurring by the removal of others to places furnished more amply with traveling accommodations. The growth of towns shut off from communication with other places at an early hour is very deliberate indeed, and if the railway companies intend waiting until the towns increase in population to a great extent before they provide trains of sufficient frequency to meet the wants of the commuting public, they should be well provided with the quality of patience.

If this be the position they have assumed, we are reminded thereby of an old anecdote which is very applicable to point a moral. A traveler was riding through a country road and came across a farmer's horse and wagon hitched to a tree. A barrel of cider stood near the tail-board of the wagon, and from a projecting end thereof, a small stream of the refreshing beverage ran out and was caught in a jug by the old farmer who was superintending its conveyance. The barrel had evidently sprung a leak, and in the farmer's other hand was a wooden plug whittled to the proper size to close the orifice of escape, and prevent the untoward flow of cider. Notwithstanding this, the old, gentleman gravely filled his jug, placed another to catch the escaping fluid, and conveyed the contents of the former back to the barrel through the bung-hole. Somewhat perplexed at this singular proceeding, the traveler waited a few moments and finally volunteered a suggestion: "Say, my friend, why don't you stop up the leak right away and save yourself all that trouble?" "That's all very fine, stranger," remarked the farmer in tones of withering contempt, "But confound it! ain't I got to ketch up with the blamed leak first?"

#### ENGLISH AND AMERICAN RAILWAY TRAVEL CONTRASTED.

THERE is something amusing as well as exasperating in the comparisons drawn by foreigners between the American system of railway travel and those of England and the continent. In a recent edition of "CHAMBER'S Encyclopædia" it is stated almost as a matter of course, that American railways are in no way comparable with those of Great Britain, where (Heaven save the mark!), the comfort of travelers is the first consideration. The baseless nature of this assertion is apparent to every American who has submitted to the inconveniences of English railway travel, but the English are suffering with that dire complaint, "Americaphobia" and so wilfully blind are they to every superiority which we may rightly claim, that as a nation, they honestly believe their own system of railway travel to surpass that of this country.

It is to be presumed, however, that the English railway managers are shrewd enough to perceive that America may teach them much in the question of railway conduct, for Pullman cars are in common use on many British roads, yet so deep-rooted is the prejudice of the English public against anything American, so great their conservative fondness for English institutions, that the sleeping cars lately imported from the Pullman car shops for use on the night trains between London and Scotland are patronized almost exclusively by Americans. As the "*Danbury News* man" expresses it in a recent work on English customs and peculiarities, the British seem to have a horror of being hurled into eternity in their night-clothes, so they cling tenaciously to their old-fashioned compartment carriages, passing sleepless nights, while the Pullman sleepers are empty half the time. Americans who have not visited England, know little of the discomforts attending railway travel in that country. They, who are familiar with the smooth and systematic operation of their own roads, can with difficulty conceive of the primitive modes practiced in England and the continent. It seems incredible that so simple a system as the checking of baggage is unknown in England, yet such is the case. Passengers who wish to regain their trunks are compelled to dismount at every station along the line and keep a sharp watch to prevent their wrong delivery. The sole indication of the destination of baggage or "luggage" as it is called in England, consists of a label gummed thereon, and there are no means of preventing others than the rightful owners from claiming it. The compartment carriages are divided transversely, and the doors are on the side. These doors are locked upon the departure of the trains, and there is no communication with adjoining carriages, while the collection of tickets, which in this country, through a wise economy of time, is accomplished while trains are in motion, is in England postponed until the trains stop at a station, where a tedious and wholly unnecessary delay is occasioned in order that the "guard" may make his round of all the carriages and inspect, handle, and collect the tickets of the passengers. The English are attached to their first, second and third class carriage system, and view with horror the practice of running local passenger trains in America with cars of one kind, open to all classes of travel. In sober truth, the first class carriages on English railways in no way surpass in comfort and beauty the ordinary passenger cars of American roads, and fall immeasurably behind the Pullman drawing-room cars in every respect, while the comparative rates of railway fares are much

higher in England than in America. Their second and third class carriages are about on a par with our emigrant cars, and in neither the first, second or third class is the slightest attention paid to the physical needs of passengers. Not even a glass of water can be procured except at the stations, and even then it is only obtainable by feeing the railway attendants. In traveling long distances upon English railways, the passengers may suffer the most painful inconvenience without hope of relief, and at the same time be shivering with cold, for heated carriages are almost unknown. The new passenger cars lately built for the Pennsylvania Railroad would be miracles of comfort and luxury to the English, yet they are employed by this road in their ordinary local travel. Hotel cars are absolutely unknown in England, and the hungry passengers are forced to have recourse to that diabolical institution, the railway restaurant.

In no way are English railways equal to those in America, so far as the comfort of passengers is concerned, yet in spite of this fact the English statisticians and authorities calmly declare that our system will not stand comparison with their own. But even in England conservatism and prejudice is not an absolute barrier to progress. The British railway authorities have at last recognized the superiority of the American railroad car over the English railway carriage, and it is highly probable that on many of their more enterprising lines, the American's heart will soon be gladdened by the sight of the familiar car with the long aisle in the center, and all the appurtenances for comfort and convenience. It will be the entering wedge of a thorough adoption of the American railway system, and a few years more will see the English roads conducted on our principle.

This reform, however, has not been contemplated until the English people were rudely awakened to the deficiency of their own system. It must be confessed that the introduction of American cars on British roads, will spring from necessity rather than from choice. The frequent murders and incessant robberies occurring in English railway carriages, aroused the people to a sense of their insecurity. The opportunity afforded for the commission of crime upon English railway trains are so glaringly apparent, that their managers will be compelled in self-defense to adopt another system of traveling accommodation. Their motives for the change are based upon practical, not theoretical grounds, but we are not disposed to find fault with them on this account. By their introduction of American cars they will tacitly admit the superiority of the American facilities for railway travel over those of England and

the Continent, and there is some hope that even the standard authorities will at last concede that American railways may be contrasted with English, without the former suffering disparagement through the comparison.

#### EDITORIAL NOTES.

GOVERNOR CLEVELAND is being roundly assailed by so-called anti-Monopolists for his action in vetoing the Five-Cent Fare Bill. They accuse him of affiliation with Monopolists and a subservience to corporate influence, even the reputable press of this city being not wholly free from insinuations regarding the motives which led him to assume the fearless and manly position indicated in his veto message. Upon the honesty and justice of his motives, no taint of suspicion can attach itself, and these unwarrantable attacks upon his personal integrity will in the end cause a reaction that will greatly enhance his reputation as a Constitutional Executive. Governor CLEVELAND may console himself with the reflection that he is not the only public official who has been assailed for the rightful performance of his duties. LINCOLN was malignantly abused by copper-heads for his prosecution of the war for the Union, and WASHINGTON was derisively called the "Step-father of his country" by the political demagogues of his day, for actions prompted by motives of national honor and a regard for the Constitution of his country. Neither of these distinguished persons suffered through the attacks made upon them for righteous actions, nor will Governor CLEVELAND for his veto of the Five-Cent Fare Bill.

It is a common practise on a number of railroads in the vicinity of New York for the trains to stop at intervals along the line to take up gangs of laborers, who are invariably herded in the smoking-cars, rendering the latter unfit for their original purpose. We wish to cast no slur upon the whole-souled hardy sons of toil who seek a whiff of the weed after a long day's work, but we strenuously object to the mingling of the fumes of carpet tobacco with those of our fragrant three-for-a-dollar Havanas, the latter, as is well known, being the customary editorial brand. The railroad companies could, with little trouble, give their employes a separate car, or if they choose to cultivate the latter's tastes, pass around a box of Reina Victorias for their delectation. As it stands now, smokers are apparently considered as inured to the odor of any vegetable that has grown within gun-shot of a tobacco field.

A RESOLUTION has been introduced in the New York Legislature, calling upon the State

Engineer to examine into the condition and management of the elevated roads of this city, with a view to determine whether or not they have watered their stock, and practiced other illegalities. This resolution is highly commendable, and we trust it may be carried into effect. Apparently the senators and assemblymen have awakened to the fact that the wheels of legislation may move with more celerity, when the cart is behind the horse.

WE have received a letter in which the writer desires us to give him the exact circulation of the JOURNAL, and the effect which would result should he place an advertisement of his business therein. In reply, we will state that our weekly circulation is between one and one hundred thousand, and the result of his advertising in the JOURNAL may be ascertained by consulting that reliable prophet, Mr. Wiggins. To put it briefly, we won't answer the first question, and can't answer the second. The one is impertinent and the other ridiculous.

THE publication of the Premium List of the Chicago Railway Exposition is continued this week in our News Department, and we give in full, the awards made for special excellence in appliances relating to machinery, track goods, metals, station and office appurtenances, and pumps and water stations. Next week the Premium List for the three remaining departments will be given. They are devoted to oils, paints and varnishes, miscellaneous appliances, and appliances for tramways.

THE concentration of electricity, and its storage for practical use as a motive power, is a subject of absorbing interest to those who are striving to solve the problem of electric locomotion. The methods employed by an Electric Storage Company recently formed in Newark, N. J., are described in an article which we publish this week in our Miscellaneous Department. The subject of Electric Storage will be further considered in subsequent issues of the JOURNAL.

THE Insurance Department of the AMERICAN RAILROAD JOURNAL will be established early in April. It will appear upon those pages immediately following the Commercial Department, and will be conducted in the interests of legitimate life and fire insurance.

WE congratulate the *Trade Review and Western Machinist* on their appreciation of æsthetic art. In a recent issue it says: "The new cover of the AMERICAN RAILROAD JOURNAL is a beauty."



## NEWS DEPARTMENT.

[Items of information suitable for this department and especially those adapted for the columns devoted to the Organization, Incorporation, Construction and Consolidation of Railways, are earnestly desired from our readers.]

## Premium List of the National Railway Exposition.

(CONTINUED FROM LAST WEEK.)

## PREMIUM LIST.

## DEPARTMENT B—MACHINERY.

## CLASS NO. 1.—WOOD WORKING.

Best Display of Wood Working Machinery (not less than six machines). . . . .	Grand Gold Medal
" Timber Dressing Machine with capacity of reducing sixteen inches wide and fourteen inches thick, on all four sides at one cut. . . . .	" "
" Planing and Matching Machine, to plane twenty-four inches wide and under, and not match less than 12 inches. . . . .	" "
" Flooring and Beading Machine. . . . .	" "
" Dimension Planing Machine, with Carriage and Roll Feed for Dressing out of Wind and Surfacing. . . . .	Silver "
" Daniels or Traverse Planing Machine. . . . .	" "
" Double Surfacing Machine to dress on one or both sides, twenty-six inches wide and eight inches thick, and under. . . . .	Gold "
" Surfacing Machine for Smoothing Purposes. . . . .	" "
" Band Saw Machine for General Work. . . . .	Silver "
" Band Saw for Re-sawing, to re-saw 24 inches wide and under. . . . .	" "
" Cutting-off Saw Machine, with Traversing Arbor for Timbers. . . . .	" "
" Bracket Cutting-off Saw Machine, with Traversing Arbor for Timbers. . . . .	" "
" Railway Cutting-off Saw Machine, with Traversing Arbor for Timbers. . . . .	" "
" Carriage Cutting-off Saw Machine. . . . .	" "
" Cutting-off Saw for Cabinet Work. . . . .	" "
" Ripping Saw with Elevating Arbor. . . . .	" "
" Ripping Saw with Stationary Arbor. . . . .	" "
" Edging Saw Machine. . . . .	" "
" Reciprocating Saw for Scroll Work. . . . .	" "
" Rotary Car Morticing and Recessing Machine. . . . .	" "
" Reciprocating Morticing and Boring Machine. . . . .	" "
" Cabinet Morticing and Boring Machine. . . . .	" "
" Reciprocating Blind Morticing and Boring Machine. . . . .	" "
" One Spindle Horizontal Boring Machine. . . . .	" "
" Two Spindle Horizontal Boring Machine. . . . .	" "
" Three Spindle Horizontal Boring Machine. . . . .	" "
" Radial Horizontal Boring Machine. . . . .	" "
" One Spindle Vertical Boring Machine. . . . .	" "
" Two Spindle Vertical Boring Machine. . . . .	" "
" Three Spindle Vertical Boring Machine. . . . .	" "
" Automatic Car Gaining Machine. . . . .	" "
" Vertical Car Tenoning Machine. . . . .	" "
" Universal Planing Machine with Movable Carriage for Timber Work. . . . .	" "
" Tenoning Machine with Copes for Cabinet and General Work. . . . .	" "
" Universal Sill Cutting-off and Boring Machine. . . . .	" "
" Vertical Spindle Shaping and Edge Molding Machine. . . . .	" "
" Single Spindle Edge Molding and Carving Machine. . . . .	" "
" Universal Wood Worker and Molder. . . . .	" "
" Straight Molding Machine to Work Four Sides. . . . .	" "
" Surface Polishing Machine. . . . .	" "
" Surface Scraping and Finishing Machine. . . . .	" "
" Automatic Knife Grinding Machine. . . . .	" "
" Wood Turning Machine for Pattern Makers' Use. . . . .	" "

## CLASS NO. 2.—IRON WORKING.

" Display of Iron Working Tools (Power), not less than six in number. . . . .	Grand Gold
" Axle Turning Machinery. . . . .	Silver
" Car Wheel Boring and Turning Machine. . . . .	Gold
" Six Spindle Drilling Machine. . . . .	Silver
" Hydraulic Wheel Press. . . . .	" "
" Wheel Grinding or Truing Machine. . . . .	" "
" Iron Planing Machine. . . . .	" "
" Iron Crank Shaping Machine. . . . .	" "
" Screw Cutting Engine Lathe. . . . .	" "
" Upright Drilling Machine. . . . .	" "
" Radial Drilling Machine. . . . .	" "
" Milling Machine. . . . .	" "
" Bolt Heading Machine. . . . .	" "
" Bolt Forging Machine. . . . .	" "
" Bolt and Screw Cutting Machine. . . . .	" "

Best Set Screw Machine. . . . .	Silver Medal
" Gear Cutting Machine. . . . .	" "
" Power Hammer. . . . .	" "
" Power Punch and Shears. . . . .	" "
" Planer Chuck. . . . .	" "
" Universal and Independent Chuck, over twelve inches in diameter. . . . .	" "
" Universal Lathe Chuck, twelve inches and under. . . . .	" "
" Assortment of Lathe Chucks. . . . .	" "
" Assortment of Planer Chucks. . . . .	" "
" Expanding Mandrel. . . . .	" "
" Flexible Mandrel for bending Pipe. . . . .	" "
" Adjustable Lathe Mandrel. . . . .	" "
" Differential Pulley Blocks. . . . .	" "
" Machine for testing quality of metals. . . . .	Gold
" Machine for testing strength of metals. . . . .	" "
" Drop Press for stamping and forging. . . . .	Silver
" Display of Emery Grinding Machinery. . . . .	" "
" Display of Machinist's Hand Tools. . . . .	" "
" Display of Machinist's Vises. . . . .	" "
" Display of Taps and Dies. . . . .	" "
" Nut Tapping Machine. . . . .	" "

## DEPARTMENT C—TRACK GOODS.

## CLASS NO. 1.

" Display of Steel and Iron Rails and Track Goods. . . . .	Grand Gold
" Track Laying Device. . . . .	Gold
" Steel Rail in Section and Finish, not less than 30 feet long, nor less than 50 pounds to yard. . . . .	Gold
" Iron Rail in Section and Finish, not less than 30 feet long, nor less than 50 pounds to yard. . . . .	Silver
" Rail Punch or Drill. . . . .	" "
" Rail Straightener. . . . .	" "
" Rail Tongs. . . . .	Bronze
" Track Bolt. . . . .	" "
" Track Bolt Washer. . . . .	" "
" Railway Fencing. . . . .	Silver
" Tamping Car. . . . .	Bronze
" Track Chair. . . . .	" "
" Claw Bar. . . . .	" "
" Cross Tie (Metal). . . . .	Silver
" Process for Preserving Wood Cross Ties and Timber. . . . .	Gold
" Power Excavator. . . . .	" "
" Frog. . . . .	Silver
" Crossing. . . . .	" "
" Fish or Angle Plate. . . . .	" "
" Track Jack. . . . .	Bronze
" Jack Screw. . . . .	" "
" Track Bolt and Nut. . . . .	" "
" Track Level. . . . .	" "
" Spike Maul. . . . .	" "
" Nut Lock. . . . .	Silver
" Scraper. . . . .	" "
" Post Hole Auger. . . . .	Bronze
" Track Gauge. . . . .	" "
" Outfit for Track Gang. . . . .	Silver
" Cold Saw Machine for cutting steel or iron bars cold. . . . .	Gold
" Shovel. . . . .	Bronze
" Spade. . . . .	" "
" Spikes (one keg). . . . .	" "
" Switch (Upright, complete). . . . .	Silver
" " (Ground, complete). . . . .	" "
" " Lock. . . . .	Bronze
" " Stand. . . . .	" "
" Track Broom. . . . .	" "
" Barrow. . . . .	" "
" Cart. . . . .	" "
" Pinch Bar. . . . .	" "
" Wrecking Frog. . . . .	Silver
" Complete Track Joint. . . . .	" "
" System of Interlocking Yard Switches. . . . .	Gold

## DEPARTMENT D.

## METALS.

" Display of Sheet Brass. . . . .	Silver
" Display of Sheet Copper. . . . .	" "
" Car Wheel Iron. . . . .	Gold
" Galvanized Iron. . . . .	Silver
" Planchet Iron. . . . .	" "
" Flanging Iron. . . . .	" "
" Locomotive Jacket Iron. . . . .	" "
" Boiler Plate (Steel). . . . .	Gold
" Boiler Plate (Iron). . . . .	Silver
" Display Iron Ores. . . . .	Gold

## DEPARTMENT E.

## CLASS NO. 1.—STATION AND OFFICE APPURTENANCES.

Best Baggage Barrow. . . . .	Bronze Medal
" " Truck. . . . .	" "
" " Check. . . . .	Silver
" Station Clock. . . . .	" "
" Engraved Folder. . . . .	" "
" Set of Freight Department Blanks. . . . .	" "
" Set of Passenger Department Blanks. . . . .	" "
" Set of Machinery Department Blanks. . . . .	" "
" Display of General Office Printing. . . . .	" "
" Platform Scale. . . . .	" "
" Track Scale. . . . .	Gold
" Display Telegraph Instruments and Supplies. . . . .	" "
" Key, Relay and Switch complete. . . . .	Silver
" Design for Suburban or Village Passenger Station, as to economy, cost and convenience. . . . .	" "
" Dating Stamp. . . . .	Bronze
" Canceling Stamp. . . . .	" "
" Depot Signal. . . . .	Silver
" System of Passenger Tickets. . . . .	" "

Best Station Annunciator. . . . .	Silver Medal
" Desk for Railway Offices. . . . .	" "
PUMPS AND WATER STATION APPLIANCES.	
" Steam Pump for Water Station. . . . .	Gold
" Hand Pump for Water Station. . . . .	Bronze
" Hydraulic Ram. . . . .	" "
" Water Column or Stand Pipe. . . . .	Silver
" Water Tank. . . . .	" "
" Water Tank Fixtures. . . . .	" "
" Wind-Mill for Water Stations. . . . .	" "

[TO BE CONCLUDED IN OUR NEXT ISSUE.]

## ORGANIZATION.

At the annual meeting of the stockholders of the Union Pacific Railway Company, held in this city on the 7th inst., the following gentlemen were elected directors for the ensuing year: Sidney Dillon, New York; Elisha Atkins, Boston; F. Gordon Dexter, Boston; Frederick L. Ames, Boston; Ezra H. Baker, Boston; Jay Gould, New York; Russell Sage, New York; Solon Humphreys, New York; David Dows, New York; Grenville M. Dodge, Council Bluffs; Augustus Schell, New York; S. H. H. Clark, Omaha, Neb.; Jno. Sharp, Salt Lake City, Utah; Charles Francis Adams, Jr., Boston; Andrew H. Green, New York. At a subsequent meeting of the directors, the following officers were chosen: President, Sidney Dillon, of New York; vice-president, Elisha Atkins, of Boston; general counsel, Sidney Bartlett, of Boston; general solicitor, John F. Dillon, of New York; secretary and treasurer, Henry McFarland, of Boston; assistant secretaries and treasurers, O. W. Mink, of Boston, and Jas. M. Ham, of New York.

The directors of the Cleveland, Columbus, Cincinnati and Indianapolis Railway Company, elected on the 7th inst., are: B. S. Brown, of Columbus; George H. Russell, of Cleveland; A. G. Dulman and William Bayard Cutting, of New York. They were all directors last year except Mr. Cutting, who is president of the St. Louis, Alton and Terre Haute Railroad, and, under the agreement of lease of his road to the Bee Line he takes the seat in the Board of Directors made vacant by the retirement of H. R. Baltzer, of New York. The officers were re-elected as follows: J. H. Devereux president, Stevenson Burke vice-president, George H. Russell secretary and treasurer, E. B. Thomas general manager. The directors of the Indianapolis and St. Louis Railroad Company re-elected Gen. Devereux president, Judge Burke vice-president, E. B. Thomas general manager.

The trustees of the Gore Underground Wire Company, elected on the 10th inst., are F. W. Allin, Charles L. Gore, Henry W. Pope, David Richmond, George A. Scott and John W. Weed. The officers are: George A. Scott, president; John W. Weed, vice-president and treasurer; Charles L. Gore, secretary and general manager. The company was incorporated a year ago with a capital of \$2,000,000. It has obtained permission to lay an experimental line in Eighth avenue, between One Hundred and Twentieth and One Hundred and Forty-fifth streets. A cable containing nine wires has been completed, and will be laid as soon as the condition of the ground will permit digging.

The stockholders of the West Jersey and Atlantic Railroad Company, at their annual meeting in Camden, on the 6th inst., elected the

following directors for the ensuing year: Israel S. Adams, Adam Fries, Mahlon Hutchinson, Strickland Kneass, Samuel G. Lewis, Benjamin F. Lee, Gershom Mott, John M. Moore, George C. Potts, Charles P. Stratton, William S. Scull, George Wood and Walter Wood. The board organized by the election of George Wood as president, Edward Bettle secretary, and Dr. William Taylor treasurer.

THE election for officers of the Philadelphia Stock Exchange, held on the 5th inst., resulted in the choice of the following: Nicholas Brice president, Joseph H. Seaver chairman, W. J. Morris vice-chairman, John C. Johnson secretary and treasurer. Governing committee—For three years, H. F. Bachman, George Stevenson, Meredith Bailey, Samuel M. Elliot, L. H. Taylors, Jr., H. L. Fell, Frank Smyth; for two years, Perritt Dulles; for one year, J. Rundle Smith.

THE annual meeting of the stockholders of the Wabash, St. Louis and Pacific Railway Co., held at St. Louis on the 13th inst., the following directors, to serve three years, were elected: Jay Gould, Russel Sage, Sidney Dillon, R. S. Hayes, T. E. Tutt, James F. How, Samuel Sloan, G. G. Haven, S. Humphreys, C. Ridgely, James F. Joy, James Cheney, George L. Dunlap and A. L. Hopkins.

At the annual meeting of the stockholders of the St. Louis, Iron Mountain and Southern Railway Co., held in St. Louis on the 15th inst., the following directors were chosen: Jay Gould, R. S. Hayes, Thomas T. Eckert, F. L. Ames, Sidney Dillon, H. Marquand, Henry Whelan, James S. Lowry, J. F. Terry, Samuel Shelthar, Russel Sage, R. J. Lackland and R. C. Kerens.

THE officers of the Cleveland, Lorain and Wheeling Railway Co., successor to the Cleveland, Tuscarawas Valley and Wheeling Railroad Co., elected on the 14th inst., are: Selah Chamberlain, president; W. S. Streater, vice-president; Oscar Townsend, general manager; C. D. Cutter, secretary and treasurer; W. H. Park, auditor; and William Thornby, superintendent.

At the annual meeting of the St. Louis and San Francisco Railway Company, held in St. Louis on the 13th inst., C. P. Huntington, James D. Fish, Leland Stanford, William F. Buckley, Jay Gould, Horace Porter, Russell Sage, A. S. Hatch, Jesse Seligman, Walter L. Frost, E. F. Winslow, R. S. Hayes and Charles W. Rogers, were unanimously elected directors.

At the annual meeting of the Chicago, St. Louis and New Orleans Railroad Company, held in New Orleans on the 7th inst., the following directors were elected: W. K. Ackermann, W. H. Osborn, James C. Clarke, James Emott, Stuyvesant Fish, James Fenteiss, W. H. Gebhard, W. B. Cutting, R. P. Neely, W. P. Harris, N. P. Moss and Adolph Schreiber.

At the annual meeting of the stockholders of the Woodstown and Swedesboro Railroad Company, held at Camden, N. J., on the 6th inst., the following directors were chosen: John V. Craven, Thomas E. Elmer, Strickland Kneass, William F. Lippencott, John M. Moore, Joseph

R. Riley, William J. Sewell, Samuel H. Weatherby, and George Wood.

At the annual meeting of the stockholders of the Quincy, Missouri and Pacific Railroad Company, held at West Quincy on the 6th inst., the following directors were elected: Solon Humphreys, James F. How, W. H. Blodgett, and Charles Ridgely, of New York; Henry Root, Amos Green, C. W. Keys, W. B. Kirkworthy, and C. H. Bull, of Quincy, Ill.

THE directors of the West Jersey Railroad Company, elected on the 6th inst., are: George B. Roberts, Lewis Mulford, Coleman F. Leaming, Charles E. Elmer, John M. Moore, Strickland Kneass, Thomas H. Dudley, George Wood, J. N. Dubarry, N. Parker Shortridge, Edmund Smith, Charles P. Stratton and John P. Whitney.

THE directors of the Richelieu and Ontario Navigation Company, recently re-elected, are: L. A. Senecal, Alex. Murray, Alex. Buntin, R. Cowans, Alp. Desjardins, J. B. Renaud, and L. J. Forget.

### CONSTRUCTION.

THE temporary track of the Northern Pacific Railroad on the Summit of the Belt Range Mountains, 1,046 miles west from St. Paul, Minn., has been completed. This track will be used to cross the mountains until the Bozeman Tunnel shall be completed at the close of next autumn. The end of the track running west is within ten miles of Bozeman. The end of the track coming east is at the mouth of the Missoula River, leaving a gap of about 290 miles to be laid, all of which is in Montana Territory. Work is progressing at both ends, there having been no cessation of labor during the entire winter. The grading of this 290 miles is nearly completed. Work on the tunnels is being pushed at the rate of twelve feet per day—that is, six feet from each end of each tunnel, the Bozeman and the Mullard. The latter will be finished by July, at which time the two ends will be joined.

THE Illinois Central Railroad Company are pushing the construction of their branch road from Jackson to Yazoo City, which is known as the Yazoo and Mississippi Valley Railroad. This company is also pushing the work vigorously on their Canton, Aberdeen and Nashville Railroad, which, when completed from Kosciusko to Aberdeen, Miss., will be 108 miles long. The grading of the extension on this branch is progressing quite rapidly, and will be laid with new steel rails and in running order in time to move this year's crop.

It was stated at the annual meeting of the stockholders of the West Jersey Railroad Company held in Camden, N. J., on the 6th inst., that during the year a road was built to Sea Isle City at a cost of \$40,000. The extension to Salem was finished and a double track was built to Temperanceville at a cost of \$92,000. The net income for the year was \$310,980.71. After paying all liabilities and two dividends of three per cent—one in stock and one in cash—there remained a surplus of \$103,921.

Work will be commenced next month on the extension of the Asheville and Spartanburg

Railroad, from the present terminus at Hendersonville, N. C., to Asheville. The distance is ten miles and there is no heavy work on the line. The company will issue \$400,000 bonds, a part of which will be used to build the extension, the balance for improvements of the completed section of the road and for the purchase of equipment.

THE Florida Southern Railroad has been completed to Brewer, six miles beyond the late terminus at Gainesville, and fifty-five miles from the St. John's River at Palatka. The grading is finished to Newansville, ten miles beyond Brewer. The Ocala division is in operation from the main line at Perry (forty miles from Palatka) to Ocala, thirty-two miles, making eighty-seven miles of road now in operation.

On the River Niger, at a place called Bamakou, a French gun-boat arrived last month, and at Senegambia the first locomotive has just made its appearance. The first mile and a half of the French railway between Senegal and the Niger was opened in December last in the presence of an amazed crowd of negroes, who slapped their hands and tried to keep pace with the train.

THE grading of the Jacksonville and St. Augustine road is nearly completed, and track-laying has begun at the northern terminus on the St. John's River, opposite Jacksonville, Fla. Trains are now running on the Houston, East and West Texas Railroad to Lewisville, Tex., fifteen miles northeast of the late terminus at Lufkin and 135 miles from Houston. Work is progressing steadily towards Shreveport.

A PROPOSITION has been made by C. P. Huntington, of Greenville, Ark., to the Board of Supervisors of Washington County and the Town Council of Greenville to build a railroad from Egypt Ridge, a point nearly opposite Arkansas City, southward to Yazoo City. The proposition will doubtless meet with the favor of the people when submitted at the polls.

ROUTES are now being surveyed by the Chicago and West Michigan Railroad Company from White Cloud, Newaygo County, to Traverse City, for an extension through Lake, Wexford and Grand Traverse counties, on a line almost due north. This extension is to be constructed at an early day, and probably much of it will be completed the present year.

THE contract for building the Ridgefield and New York railroad from Danbury, Conn., to Port Chester, N. Y., has been let. The road is to be completed during the present year. A new company is being organized, to be called the New York, Danbury and Boston Railroad Company.

THE construction of the Augusta, Elberton and Chicago Railroad has been commenced at the junction with the Augusta and Knoxville Railroad in South Carolina, about fifteen miles from Augusta, Ga. Enough stock has been subscribed to grade the road to Elberton.

THE surveys for the Harrisburg and Western (formerly South Pennsylvania) Railroad are now in progress. The new line will reach Somerset, striking the borough limits near the



Old Fair Grounds, whereas the old line left Somerset about three miles to the south.

THE tunnel on the Georgia division of the East Tennessee, Virginia and Georgia Railroad, between Rome and Atlanta, was completed and opened on the 1st inst. This tunnel does away with the temporary track around the mountain, which has caused so much trouble.

Two companies have applied for charters to build a railroad in Victoria, B. C., from the lower river to the boundary line. The capital of one company is \$500,000, and of the other \$1,000,000. No lands are asked for, merely the right of way.

CONTRACTS for the construction of ninety miles of the Ohio River Railroad from Wheeling west have been let. The intention is to follow the Ohio River to Cincinnati, and eventually to build a line to Memphis, Tenn.

WORK on the new railroad from Jacksonville, Florida, to Tampa and Key West was commenced on the 12th inst., and will be pushed with the utmost rapidity. Gen. John B. Gordon is president of the company.

THE West Virginia Railroad is to be extended to Davis, six miles beyond Fairfaxstone, during the present year. The road is now doing a large business, and over 1,000 tons of coal are being mined daily.

THE Mexican National Railway is being pushed from Monterey. Contractors say they will complete it to Saltillo by August. Saltillo is 230 miles from the Texas border.

#### INCORPORATION.

The incorporators of the Bay Ridge Steamship Company, recently organized, are: Samuel Manning, Milton S. Dyer and Mayor Hildreth, of Worcester, Mass.; E. P. Carpenter and Waldo Adams, of Boston, Mass.; Henry J. Steere and J. B. Chace, of Providence, R. I.; A. C. Lombard, William Dinsmore and J. S. Eldridge, of New York; Herbert Snelling, Henry Craske and A. Perry Bliven, of Brooklyn, and James E. Smith, of Nyack. The latter will have charge of the works and Dr. Bliven will be the constructing engineer. The company has secured 27 acres of land adjoining the dock of the Manhattan Railway Company at Bay Ridge, L. I., giving a water-front of 700 feet. It will immediately begin the erection of the necessary buildings, machine shops, etc. It will also build a cob-dock and excavate to a depth sufficient to accommodate the largest steamers. Its capital is \$600,000, and it will build either of wood, iron or steel all descriptions of vessels, steam or sail.

A certificate of incorporation of the New York Mutual Telegraph Company was filed in the County Clerk's office on the 14th inst. The incorporators are Wilson Godfrey, John H. Walker, William York Atlee, George L. Record and David B. Waters. The capital stock of the company is fixed at \$25,000, divided into 1,000 shares of \$25 each. The capital stock may be increased at any time by the directors with the consent in writing of the stockholders holding or owning three-fourths of the amount of the then capital stock of the company. The lines of this company are to run generally from the

Stock Exchange and other Exchanges in this city through the States of New York, Pennsylvania, Ohio, Indiana and Illinois and to go by way of Albany, Rochester and Cleveland to Chicago, and in all the intermediate cities and towns.

#### Pennsylvania Railroad Company.

THE following is an abstract of the Thirty-sixth Annual Report of the president and directors of the Pennsylvania Railroad Company—being for the year ending December 31, 1882—which was presented to the stockholders at their annual meeting in Philadelphia on Tuesday last:—

The gross earnings on the Pennsylvania Division, main line and branches, Pittsburgh to Philadelphia, for the year ending December 31, 1882, were \$30,836,962.23, the operating expenses \$17,878,776.69, and the net earnings \$12,958,185.54; to which add interest on investments, etc., \$3,973,308.86, making a total of \$16,931,494.40; from which deduct payments for leases and rentals, interest on bonded debt, etc., \$6,162,931.37, leaving as net earnings the sum of \$10,768,563.03. Compared with the year 1881, there is an increase in gross earnings of \$3,189,953.44, with an increase in expenses of \$2,410,308.09, making the increase in net earnings \$779,645.35. There was an increase in interest from investments, etc., of \$249,682.79, and an increase in interest on bonded debt, etc., of \$392,483.33—making the increase in the net income of the Pennsylvania Division over 1881, \$636,844.81.

The gross earnings of the United New Jersey Railroad and Canal Company, including the Belvidere Delaware Railroad and Flemington Branch, during the year 1882, were \$14,231,458.10, the expenses \$10,169,094.21, and the net earnings \$4,062,363.89; to which add interest from investments, \$246,926.62—making the total net earnings \$4,309,290.51. The amount disbursed for interest, dividends, etc., was \$4,878,049.16—showing a net loss under the lease of \$568,758.65. Compared with the year 1881, the gross earnings show an increase of \$1,208,593.11, with an increase in expenses of \$1,357,813.18—making a decrease in net earnings of \$149,220.07; less increase in interest received from investments, \$36,090.16, reducing the decrease to \$113,129.91. There was an increase in payments on account of dividends, interest, etc., of \$152,764—making the net loss in operating the New Jersey Division \$265,893.91 more than in 1881.

Deducting the net loss from operating the New Jersey Division from the net income of the Pennsylvania Division, as shown above, leaves a balance of \$10,199,804.38; from which deduct payments to the fund for the purchase of securities guaranteed by the Pennsylvania Railroad Company, under trust created Oct. 9, 1878, \$600,000, Pennsylvania Railroad Company's consolidated mortgage bonds, redeemed by sinking fund, \$282,810; advanced Shamokin Coal Co., to protect property, \$3,500; deficiency in meeting interest by Allegheny Valley Railroad Co., \$257,383.81, advanced to pay two bonds due the State, \$200,000, and for other advances made \$161,591.19; deficiency in meeting interest by Sunbury, Hazleton and Wilkes-

barre Railway Co., \$50,000; by Frederick and Pennsylvania Line Railroad Co., \$15,000; by American Steamship Co., \$90,000, and for other advances \$25,000; in all, \$1,685,285—leaving balance to credit of income account \$8,514,519.38; out of which was paid dividends of per cent, amounting to \$6,890,714.75—leaving amount to be transferred to credit of profit and loss account for 1882, \$1,623,804.63; to this is added \$10,344,079.34 to credit of that account December 31, 1881, and \$226,755.44 realized from settlements of old accounts and profit on sale of securities—leaving \$12,194,639.41 to credit of profit and loss December 31, 1882, a gain during the year of \$1,850,560.07.

The gross earnings of the Philadelphia and Erie Railroad in 1882 were \$4,011,413.29, the expenses \$2,599,534.55, and the net earnings \$1,411,878.74. Deduct interest charged for the use of equipment, \$160,410.55, leaves net amount applicable to payment of interest, etc., \$1,251,468.19, which amount was paid to the Philadelphia and Erie Railroad Company as rental. Compared with 1881, the gross earnings show an increase of \$557,104.24, the expenses an increase of \$169,474.25, and the net earnings an increase of \$387,629.99. The amount applicable to the payment of interest shows an increase of \$527,843.05.

The gross earnings of all the lines east of Pittsburgh and Erie for the year 1882 were \$49,079,833.62, the expenses \$30,647,405.44, rental and interest on equipment \$3,472,713.20, and the net earnings \$14,959,714.97—showing an increase in gross earnings, compared with 1881, \$4,955,650.79, an increase in expenses, etc., of \$4,648,036.96, and an increase in net earnings of \$307,613.83.

The number of tons of freight moved over the lines east of Pittsburgh and Erie in 1882 was 35,840,060, against 32,606,264 in 1881, an increase of 3,233,796. The number of tons carried one mile in 1882 was 3,977,280,048, against 3,700,811,373 in 1881, an increase of 276,468,675.

The number of passengers carried on all lines east of Pittsburgh and Erie for the year 1882 was 21,887,992, against 18,985,409 in 1881, an increase of 2,902,583. The total mileage of passengers was 496,202,927, against 446,316,555 in 1881, an increase of 49,886,372.

The total earnings of the Pennsylvania Company on lines operated by it, and through organizations worked under its control, in 1882, were \$19,025,661.42, the expenses \$10,976,120.85, and the net earnings \$8,049,540.57; from which deduct rentals, interest, and liabilities of all kinds chargeable thereto, \$6,180,162.75—leaving net profit of \$1,869,377.82. The total earnings of the Pittsburgh, Cincinnati and St. Louis Railway Company on lines operated by it and through organizations worked under its control, in 1882, were \$11,783,573.09, the expenses \$9,114,008.07, and the net earnings \$2,669,565.02; the rentals, interest, and liabilities of all kinds chargeable thereto, including the net earnings of the Columbus, Chicago and Indiana Central Railway, paid over to the receivers under order of the court, amounted to \$2,675,131.10—showing a net loss of \$5,566.08, and making the net profit on all lines west of Pittsburgh in 1882, \$1,863,811.74, against \$2,772,-

413.86 in 1881, a decrease of \$908,602.12. The aggregate gross earnings of the other lines west of Pittsburgh in connection with which the company has assumed liabilities, or which it controls through the ownership of stock, but which are worked through their own individual organizations—comprising of the St. Louis, Vandalia and Terre Haute, the Grand Rapids and Indiana, and roads operated through its organization, and the East St. Louis and Carondelet—were \$4,521,768.87, the expenses \$3,278,200.58, and the net earnings \$1,243,568.29; from which deduct interest and rentals, \$1,206,380.53, leaving a profit of \$37,187.77, of which the company is entitled to \$30,488.57, which added to the above profit of \$1,863,811.74, leaves a net profit on all lines west of Pittsburgh of \$1,894,300.31, against \$2,648,338.21 in 1881, showing a decrease of \$754,037.90. After paying all its fixed and adjudicated obligations, the Pennsylvania Company was enabled to pay a dividend of four per cent upon its full paid capital stock of \$20,000,000, and carry to the credit of profit and loss account a surplus of \$1,067,883.45.

The number of tons moved on all lines directly operated west of Pittsburgh in 1882 was 24,977,807; do. moved one mile, 2,729,844,763. In 1881 the number of tons moved was 23,858,132, and the number moved one mile 2,707,827,014.

The number of passengers carried on all lines directly operated west of Pittsburgh in 1882 was 11,611,639; do. carried one mile, 369,349,969. In 1881 the number of passengers carried was 10,212,810, and the number carried one mile 345,385,835.

The gross earning of all lines directly operated east and west of Pittsburgh in 1882 were \$79,889,068.13; and the gross expenses, excluding rentals, interest, dividends, etc., were \$50,737,534.37—showing net earnings \$29,151,533.76; in 1881 the gross earnings were \$75,182,973.77, the expenses \$46,243,277.88, and the net earnings \$28,939,695.89—showing an increase in earnings of \$4,706,094.36, in expenses of \$4,494,256.49, and in net earnings of \$211,837.87.

The number of tons of freight moved on all the lines directly operated east and west of Pittsburgh in 1882 was 60,817,867; and the number moved one mile, 6,707,124,811. In 1881 the number of tons moved was 56,464,396, and the number moved one mile 6,408,638,387.

The number of passengers carried on all lines directly operated east and west of Pittsburgh in 1882 was 33,499,631, and the number carried one mile 865,552,896. In 1881 the number carried was 29,198,219, and the number carried one mile 791,702,390.

#### The Last Contract Given out for the Northern Pacific Railroad.

THE Northern Pacific Railroad Company closed on the 10th inst., the last contract that will ever be let on the main line of that road. On that day Messrs. H. Clark of this city, and Winston Bros. of Minneapolis, were awarded the contract for completing the track from the present eastern terminus of the Western or Pacific Division into Helena, the capital of Montana. The 150-mile contract will include the main summit of the Rocky Mountains. Work has

been for some time progressing on the tunnel at Mullan's Pass through the main range west of Helena. Its length is 3,850 feet, and its elevation above the sea 5,548 feet. This lacks just 17 feet of the height of the tunnel at Bozeman Pass, the point at which the Northern Pacific surmounts the Belt range of the Rocky Mountains. The tunnel of Bozeman will be 3,600 feet in length, and its elevation above the sea 5,565 feet. Work is also rapidly progressing from both directions on this latter tunnel and it is expected that it will be completed in ample time to meet the requirements of construction this year. The final measurements and location of the two tunnels show that the highest elevation on the Northern Pacific will be 2,495 feet lower than the highest point on the Union Pacific at Sherman, and nearly 2,500 feet lower than the highest point on the Central Pacific where it crosses the Sierra Nevada Mountains.

#### Color-Blindness in Railway Employees.

The Committee on Railroads of the Massachusetts Legislature gave a hearing on Thursday of last week, to a large number of railroad employes, who have petitioned for a repeal or modification of the existing law on the subject of color-blindness. They claim that under this law a number of worthy men are shut out from railroad employment because of the extreme rigor of the examination required by ophthalmic surgeons, who often present 150 different shades of worsted, and reject the applicant for failure to distinguish between two or more shades that are almost identical. They ask that the law be amended so as to confine the examination to the colors and shades that are used in the practical operation of railroads. From the evidence before the committee it is generally believed the law will either be repealed, as was its fate in Connecticut, or the examination will be confined to the signals, as desired by the men.

#### Philadelphia, Germantown and Chestnut Hill Railroad.

The route of this road, which is being built by the Pennsylvania Railroad Company, leaves the Connecting Railway about 300 feet west of the Philadelphia and Reading Railroad at Germantown Junction, crosses over Sixteenth street at Indiana avenue, thence west over Seventeenth street and across the Norristown branch of the Philadelphia, Germantown and Norristown Railroad, then crossing over Allegheny avenue, runs north over Nicetown lane about one square west of Township line road; thence over the Richmond branch of the Philadelphia and Reading Railroad at Old Oaks, it crosses the township line road at Queen street; thence goes to Chelton avenue at Pulaski street, where the main depot in Germantown will be; thence it runs diagonally, crossing Wayne street at Washington avenue, then through the Carpenter and McClain properties, crossing Allen's lane at the junction of Cresheim road; thence crossing the Cresheim Creek at the old burnt mill, thence parallel with Thirtieth street to Highland avenue, then curving around parallel with Evergreen avenue it

crosses to Germantown avenue at the forks of the Perkiomen and Spring House turnpikes, where the main depot for Chestnut Hill is to be. This line runs through Germantown, Mount Airy and Chestnut Hill westward of Germantown avenue, while the present branch of the Philadelphia and Reading Railroad runs to the eastward of that avenue. We understand that the entire line has been located, and that the work of construction will commence at once. It will be a double track road throughout.

#### Wealth of the Canadian Pacific Railway Co.

THE Canadian Pacific Railway Company is pronounced by the San Francisco *Chronicle* to be one of the richest corporations in the world. It commenced, according to that paper, with a grant of 756 miles of road built and in operation; another grant of 25,000,000 acres of land, said to be worth on the average \$5 per acre, and a government guarantee of the clear gift of \$25,000,000, to be paid by instalments, so much upon the completion of each section of twenty miles. Its charter exempts the road, equipment and capital stock from taxes forever, and it has free right of way, with all the materials for construction and equipment free from duty. The whole mileage to be built by the company is less than 2,400 miles. The eastern half of it will not cost more than \$15,000 a mile, or \$18,000,000. The western half, including passage through two ranges of mountains, may cost an average of \$35,000 a mile, or \$42,000,000; a total probable cost of \$60,000,000, of which the government pays \$25,000,000, leaving for the company but \$35,000,000, which 7,000,000 acres of their land grant from Winnipeg westward will pay. They will then have left their entire capital stock and 18,000,000 acres of land for the construction of connections and branches and equipment, and for the creation of connecting lines of steamships from Montreal to Europe at the East, and from Port Moody with Australia, China and San Francisco at the West. A company so rich in funds and exempt from all taxes forever and so large a surplus ought to become a regulator of all the other transcontinental railways and force them into reasonable and fair treatment of the public.

#### National General Passenger and Ticket Agents' Association.

The National General Passenger and Ticket Agents' Association commenced its semi-annual convention at 46 Bond street, in this city, on the 13th inst. Nearly all the Western and Southwestern Railroads were represented. The association went into session at 11 A. M., and the day was nearly all taken up in organization and getting the business systematized. At 2 o'clock the meeting adjourned to meet at the same place at 11 o'clock on the 14th.

At the adjourned meeting, held on the 14th inst., a resolution was passed that hereafter a doctor's certificate must accompany every corpse shipped from one point to another. The object of this is to guard against carrying the bodies of people who have died of contagious



diseases. The convention also determined to limit the weight of trunks or boxes carried as baggage to 250 pounds. Mr. A. J. Smith, of the Cleveland, Columbus and Cincinnati Railway, explained that this was not the number of pounds a passenger was allowed to carry; he can carry as much as he pleases, but he must have it in a package or trunk the weight of which will not exceed 250 pounds. Mr. Smith said that the "baggage smashers" all over the country were breaking down owing to the heavy trunks they were now compelled to lift. The convention then adjourned till the second Tuesday in September, when a meeting will be held in Chicago.

#### Dishonest Railway Passengers.

"No fewer than 10,549 persons were detected during the past half year trying to defraud the North London Company by riding in a superior class to that for which they had paid, or by paying no fare at all." Such, says the *London Graphic*, is the statement of the worthy Chairman of the North London Railway Company, and it causes reflections which are the reverse of pleasant. As the North Londoners are probably not more immoral than other people, these figures indicate an uncomfortably large percentage of petty rogues in our midst. Still there are palliations. Just as there are people who will purloin an umbrella but not a watch, so there are people who will not scruple to "beat" a railway company who would be loth to wrong a private person. They copy the morality of the mediæval outlaws who plundered rich abbots and fat graziers, but spared the poor man's donkey or goose. Then there is a difference of degree in the guilt of the offenses above enumerated. We should not like to make a bosom friend of a man who habitually shouted "Season!" in passing the collector, although, in actual fact, ticketless. But the man who, with a crowded train and only thirty seconds to get into it, leaps into a first-class carriage with a second or third-class ticket, may, if he does not do it too often, be a decent fellow enough.

#### Signal Whistles.

WHAT has long been a mystery to the *Binghamton News* why there has been so much screeching, blowing and tooting of the locomotive whistles on the incoming and outgoing trains running through that city has finally been solved. "It seems," says that paper, "that the practice is indulged in by engineers as a means by which to salute their wives and sweethearts along the line of railroad at which they reside, or to wake up a sleeping 'chum,' and that these signals and their meaning are well understood by the parties for whom they are intended. We have heard it stated on good and unquestionable authority that an engineer on one of the trains on the Binghamton and Syracuse road blows a signal for his wife when his train is nearing the city which she understands to have his supper ready for him within the next twenty minutes, at which time he is invariably on hand and at home, and sits down at his own table to participate in the meal. There may be sense in this as a signal,

but courting by steam-whistle along the line of railroad is something both novel and absurd, while it is annoying to the community. This way of making love is too loud and indelicate."

#### Weekly News Items.

In the case of the trustees of Fosdick & Fish against the Chicago, Danville and Vincennes Railroad Company, Judge Blodgett, of the Federal Court, Chicago, on the 14th inst., made a number of rulings. The road in question was bought under a foreclosure and is being operated by the Chicago and Eastern Illinois Railroad. The court denied the motion of the stockholders of the old Danville and Vincennes Railroad that the property be ordered back into the hands of a receiver on the ground that the Chicago and Eastern Illinois Railroad Company is a responsible corporation. The court also denied the motion for reference to a master in chancery, pending the hearing of a case in which the Chicago and Eastern Illinois Railroad Company is defendant; also the motion to strike the bill from the files on the ground that the Chicago and Eastern Illinois Company claimed to be bona fide purchasers and might have a right to a decree.

At a meeting of the directors of the Eastern Railroad Company, held in Boston on the 15th inst., an agreement for a consolidation of that company with the Boston and Maine Railroad Company was adopted, and a special meeting of the stockholders to ratify the same was called to be held on the 28th inst. The Boston and Maine Railroad Company has already ratified this agreement, and nothing remains to be done but the ratification by the Eastern Railroad Company and the signing of the contract. The *Traveler* says: "The basis of the consolidation is seven per cent. to the Boston and Maine Railroad Company, the interest on the Eastern Railroad bonds, payment of the fixed charges on both roads, and six per cent out of the surplus to the Eastern Railroad Company."

THE contract for constructing the piers and abutments of the new iron bridge across the Schuylkill river at Manayunk, on the line of the Philadelphia, Germantown and Chestnut Hill Railroad (the new branch of the Pennsylvania Railroad system) has been let to E. D. Smith. The length of the bridge will be 1,600 feet, and the width sufficient to accommodate two tracks. It will be eighty feet above the water level and have two spans across the water of 240 feet each. The position will be diagonal, from southwest to northeast, and there will be but one pier in the river, which will be built askew and in a line with the course of the stream. The piers and abutments are to be of stone and the spans of iron. The cost of construction is estimated at \$250,000.

A NAUTICAL mile, or an English Admiralty knot, is 6,080 feet. The United States Coast Survey, always most accurate in such things, has adopted 1853.248 metres, or 6080.27 feet, as the standard mile, which is properly "a minute of latitude," but more accurately the sixtieth

part of a degree on the great circle of a sphere whose surface is equal to the surface of the earth. A minute of latitude, according to the head of the Coast Survey, would be 1,861.655 metres at the poles, and 1,842.787 metres at the equator. One minute of the equator would be 1,855.345 metres, or 6,087.15 feet.

THE Ohio State *Journal* says that work on the Columbus and Maysville Railroad will be commenced within the next sixty days. The company have \$200,000 available work done, \$300,000 local aid secured, the right of way donated on 104 miles of the line, and a special charter to build a road in Kentucky. This does not indicate that the enterprise is defunct, as has been recently stated. It is intended to put down a first class standard gauge, steel rails, thoroughly equipped. The present narrow-gauge track owned by the company will be widened.

THE Canadian Pacific Railway Company have despatched another special train to Winnipeg, Manitoba, consisting of eighteen carloads of goods in charge of representatives of the shipping firms. The train route is via the Canadian Pacific Railway to Brockville, Utica and Black River Railroad, New York Central, Lake Shore and Michigan Southern, Chicago and Northwestern and Canadian Pacific Railway, Eastern Division, to Winnipeg, which is not only expected, but guaranteed, to reach in fourteen days.

It is announced that the Northern Pacific Railroad will be completed through from St. Paul, Minn., to Portland, Oregon, by September 1. Only 280 miles of track remain to be laid. The iron is being put down at the rate of two miles a day on the Western Division and a mile and a half on the Eastern Division, rapidly closing up the gap. Passengers then will be able to take a through train from St. Paul to Portland and Seattle.

In the contemplated introduction of cable traction on certain tramways in New York city, the Hallidie steel-rope system will be employed, as now used on the cable traction tramways of San Francisco and Chicago. It is claimed that by this system the New York tramways could make a uniform profit of three cents a fare, their cars running at the rate of eight miles per hour.

THE Boston, Concord and Montreal Railroad Company is testing an automatic coupler invented by J. C. Mitchell of Manchester, N. H., where a company, with a large capital, has been organized to work the patent. The Fitchburg and Concord Railroad Company are also soon to test the new coupler.

THE track built around the city of Lancaster by the Pennsylvania Railroad and intended for freight trains, has been completed and connected with the main line.

A TRAIN tail-light has been patented by Jno. A. MILLER of Cairo, Ill., which consists of a single mechanism readily attached to the rear platform of the last car of a train and connected with the car-axle by an elastic cord. By

this device a reflector lantern is kept rotating at the tail of the train, and enables the engineer of a train, when approaching or following another train of cars, to know with some certainty at what speed and in what direction the train ahead of him is moving, and thereby regulate the speed of his own train and prevent collision or accidents.

AN application from the directors of the Southern Pacific Railroad Company for the appointment of a commission to examine a completed section of that road extending about 140 miles eastward from Mohave, Arizona, is now pending in the Department of the Interior at Washington.

THE Washington, Cincinnati and St. Louis Railroad, a narrow-gauge road, on which some work was done west of Harrisonburg, Va., under the presidency of the late Peter B. Borst, is to be sold on the 7th of April, together with a large quantity of mineral land.

It is said that the only female switch tender in railway employ is Annie Geandter, who lives in Milwaukee and tends seven switches upon the Chicago, Milwaukee and St. Paul Railway. She is known as "Switch Annie" by the train men.

THE Clifton and Southern Pacific Railway Company has ordered of the Litchfield Gas and Machine Company, of Litchfield, Ill., sixteen coke cars with the United States Car Company's dumping appliances.

THE Committee on Street Railways of the Massachusetts Legislature voted on the 6th inst., 6 to 5, in favor of reporting a charter for the Meigs Elevated Railroad in the city of Boston.

"SIR," replied the critic to the would-be poet, "your poems will be read when Milton's and Shakespeare's are forgotten—but not till then." The Esterbrook Steel Pens, however, will not have to wait for fame, for they are now the most popular pens in use.

THERE are some people in this world who closely resemble mosquitoes. There isn't much of them, but they tease and fret you all the time.

## NOTICE.

### To Manufacturers of Railway Supplies, Etc.

Having opened an office in the City of Philadelphia, which is fast becoming a railroad center, for the purpose of handling Railroad Supplies, making a specialty of goods of western manufacture, I respectfully solicit the Eastern Agency of Western Houses desiring to open up a line of trade for their goods in that locality.

Address

**L. M. SHUTE,**

311½ Walnut Street,

Philadelphia, Pa

## CORRESPONDENCE.

[COMMUNICATIONS are solicited for this department on all subjects pertaining to Railroads, Steam Navigation, Machinery, Manufactures, etc. No attention will be paid to communications unless the name and address of the writer is furnished us, though if desired, they will be withheld from publication. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to this department of the AMERICAN RAILROAD JOURNAL.]

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

The heavy snow storms of the last week have blocked railways and interfered with traffic. The country roads are almost impassable. Our weather prophet, Dr. Wiggins, claims that his "storm" set in on time and fully came up to his expectations. The anticipated storm has been of absorbing interest, and as it seems to still be lingering about we may expect to hear it discussed for the next few days to the exclusion of other matters.

The "Société Postale de l'Atlantique" or French line of steamers between Brazil and Canada, it is said will be taken off. This, if a fact, is much to be regretted, as the line gave promise of being a most successful one, and of great advantage and most desirable to both countries. Last Thursday the Hon. Mr. Pelletier of the Senate moved for a return of each trip made between Canada and Brazil, by the "Société Postale de l'Atlantique," according to contract with the Canadian and Brazilian Governments, with the following statements to 1st February, 1883:—

Name of the Steamer, Owner or Charterer, Tonnage, Accommodation for Passengers, Number of Passengers from each Port and their Destination, Accommodation for Freight, Gross Quantities and nature of Freight from each Port and Destination, Freight and Passenger rates paid, Day of Departure appointed by Canadian Government and Day of Sailing, Amount of Mails carried, Penalty paid for delay or non-fulfilment of Contract, Subsidy paid by Canada, Subsidy paid by Brazil, Number of days required for the Single and Return Trips.

Also, all correspondence between the Canadian Government and the Company referring to the present suspension of service and an increased subsidy.

Also, with reference to a subsidy for a regular service between France and Canada.

The Montreal, Ottawa, and Western Railway Company, ask to have its name changed to the "Montreal and Western Railway Company." To promote the interests of colonization it is necessary to build a railway through the territory lying north and west of the Ottawa River in the Province of Quebec. Therefore the company ask for authority to extend its line of railway from the parish of Ste. Agathe, in the County of Terrebonne, through the valley of the Riviere Rouge to the River Gatineau, in or near the township of Maniwaki, in the county of Ottawa, and thence to a point of junction

with the Canadian Pacific Railway between lakes Nipissing and Temiscamingue; with power to acquire by purchase or otherwise any line or part of a line of railway between the said parish of Ste. Agathe and the city of Montreal.

The Ontario Pacific Railway Co. pray, among others, to extend line to Sault Ste. Marie; Perth or Smith's Falls, Almonte, by Carleton Place to Pembroke, etc.; also for power until certain bridges (over St. Lawrence and at Sault Ste. Marie) to construct, etc., water craft to convey freight and passengers over said rivers and navigate St. Lawrence, great lakes and rivers, etc.

The Atlantic, Pacific and Peace River Telegraph Company ask for power to construct, make or lay, purchase, etc., a line of telegraph from some point on the west coast of Ireland or Scotland, by way of Greenland, Hudson's Straits, Hudson's Bay, Fort Churchill, Athabasca Lake and the Peace River to some point on the coast of the Pacific Ocean in the vicinity of Fort Simpson, and power to extend thence northwesterly to a point of junction with the Russian telegraph system, with full power and authority to make connection with a line of any telegraph company or companies, and any other necessary arrangement.

The Niagara Railway Bridge Company composed of William H. Vanderbilt, Cornelius Vanderbilt, Augustus Schell, and Charles F. Fox, of New York City, William P. Taylor, of Buffalo, and Alexander John Cattinach and Nicol Kingsmill, both of Toronto, apply for power to build a bridge across the Niagara River at Niagara. The work to be commenced within three years and completed within six years from passing of the act.

The Pacific and Peace River Railway Company apply for charter to construct and operate a railway from some point on the Pacific Ocean, situated near Fort Simpson to some point on the Peace River east of Fort Dunvegan in the Northwest Territories, also to own vessels, etc., for transporting freight, etc., from the eastern terminus to Europe or elsewhere.

The Quebec and James Bay Railway Company ask for power to build and operate a railway from the Quebec and Lake St. John Railway in Quebec to some point on James Bay. The capital stock to be one million dollars.

The Edmonton and Peace River Railway and Navigation Company apply for charter.

The Royal Canadian Passenger Steamship Company apply for a charter with power to own steamships, etc., to run to and fro between Lake Ontario and the Saugenay River and elsewhere. The capital stock to be one million dollars, with head office at Montreal.

The Atlantic and Northwestern Railway Company apply to have their act of incorporation amended in respect to issue of mortgage bonds in relation to sections of the railway, and to make arrangements with railway companies in reference to running powers over the bridge to be built across the St. Lawrence.

The Portage and Westbourne Railway Company ask to have their incorporation acts amended, and to change the name to the "Great Northern Railway Company of Canada."

George Henry Nicholls and Charles Kyte, of



New York City, and others, ask for incorporation of the Dominion Phosphate and Mining Company. Capital stock \$150,000. Head office Ottawa, Ontario.

The Chignecto Marine Transport Railway Company ask to have their act amended, and that the capital stock of the company shall not exceed \$2,000,000.

The Wood Mountain, Qu'Appelle and Prince Albert Railway Company apply for incorporation.

A motion was made in Parliament for all correspondence between the Canadian and United States Governments, or any Board of Trade in Canada or the United States upon the question of Reciprocal Trade relations between the two countries on the general basis of the Reciprocity Treaty of 1854.

Time is asked for the commencement and completion of the Great Western and Lake Ontario Shore Railway.

A starch company has been formed in Toronto with a capital stock of \$150,000.

Messrs. John McDougal, L. A. Senecal and others ask for incorporation as the Cumberland Coal and Railway Company to work coal mines, a railway, etc., in Cumberland County, Nova Scotia.

A bill to increase the facilities of railway companies to amalgamate, etc., has been introduced by Mr. Riopelle in the Dominion Parliament. The bill is the very opposite of the bill lately introduced by Mr. Mulock.

The following has been introduced by the Minister of Customs, and will shortly become law:

"1. To give additional facilities and remedies for the collection of customs duties, and penalties and forfeitures, and for the prevention of smuggling and other frauds on the revenue, and for the punishment of contraventions of the customs laws.

"2. To provide for the granting of a rebate of duty upon damaged goods paying specific duties.

"3. To specify the terms upon which bonds given for the due exportation of goods may be cancelled.

"4. To make provision for the delivery of warehoused goods as ships' stores to vessels bound for and engaged in the deep sea fisheries.

"5. To provide for the punishment of persons unlawfully gaining access to or removing bonded goods in railway cars.

"6. To make better provision for arriving at decisions with respect to seizures or detentions of goods, and with respect to penalties and forfeitures, and to the terms for release of such goods or remission of such penalties or forfeitures."

It is reported that the Canadian Pacific Railway will abandon the proposed Kicking Horse Pass, and take the Yellow Head Pass, but just now it is difficult to determine, as the report may have been originated by certain interested parties.

We strongly recommend capitalists and others intending to invest in mines in Canada to place themselves in correspondence with reliable parties; and make a thorough and careful investigation of both agent and property before pur-

chasing. This will save much trouble and disappointment.

The Toronto representatives of Gaff, Fleischman & Co., of yeast celebrity, waited on the Deputy Minister of Customs Saturday with reference to undervaluation of yeast from the United States. The yeast is entered at ten cents per pound and sold at thirty-five cents. The authorities maintain that it is under entered, and if the case is given against the firm, large arrears would have to be paid. The matter will be arranged satisfactorily. "W."

OTTAWA, March 13, 1883.

## NEW YORK AND NEW ENGLAND RAILROAD.

### Resumption of the Favorite Transfer Steamer Maryland Route.

THROUGH PULLMAN CARS FOR

PHILADELPHIA, BALTIMORE AND WASHINGTON,

WITHOUT CHANGE: connecting with through trains to Florida and all points South and West. Train leaves Boston at 6:30 P. M. daily.

Leave Boston for Grand Central Depot, New York, at 9 A. M.; returning, leave New York at 11 A. M. and 11:34 P. M., week days. Pullman Palace Cars run through.

## THE NORWICH LINE

—BETWEEN—

### BOSTON AND NEW YORK.

Steamboat train leaves Boston 6:30 P. M. arrives at New London at 10:00 P. M., connecting with the new steamer City of Worcester, Monday, Wednesdays and Fridays, and City of New York, Tuesdays, Thursdays and Saturdays. Returning, steamer leaves Pier 40, North River, New York, at 4:30 P. M., connecting at New London with train leaving at 4:05 A. M., arriving in Boston at 7:55 A. M. Good night's rest on the boat.

### Ask for Tickets via N. Y. & N. E. R. R.

Office 322 Washington st., Depot foot Summer st., Boston.

S. M. FELTON, JR.,  
Gen'l Manager.

A. C. KENDALL,  
Gen'l Pass. Agent.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs**, as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,  
General Manager.

A. V. H. CARPENTER,  
Gen. Pass. and Tick. Agt.

J. T. CLARK,  
General Supt.

GEO. H. HEAFFORD,  
Ass't Gen. Pass. Agt.

## HOUSATONIC RAILROAD.

### THE ONLY LINE RUNNING THROUGH CARS

Between New York, Great Barrington, Stockbridge, Lenox, and Pittsfield—the far-famed resorts of the

### Berkshire Hills

of Western Massachusetts—the "Switzerland of America."

Two through trains daily between New York City and all points on the Housatonic Railroad, from the Grand Central Depot via the New York, New Haven, and Hartford Railroad at 10 A. M. and 3:39 P. M.

Descriptive Guide-Book sent free by mail upon application to the General Ticket Agent.

H. D. AVERILL, Gen'l Ticket Agent.

W. H. YEOMANS, Superintendent.

General Offices Bridgeport, Ct. Dec. 27, 1882.

## "Progressive and Reliable."

"Under its present management,

## THE ERIE RAILWAY

is become the most progressive and reliable Trunk Line in America."—Cleveland Leader.

## THE ERIE

is the **SAFE and COMFORTABLE** Line between the East and West. Its equipment is unsurpassed—Pullman Coaches, Westinghouse Air-Brake, Miller Safety Platform, Cars Lighted by Gas, Steel Rails, Double Track.

The scenery along the line includes such great Works of Nature as Niagara Falls, Watkin's Glen, Portage Falls and Gorge, the Great Lakes and the Lakes of Central and Western New York, making it truly the "LANDSCAPE ROUTE OF AMERICA."

E. S. BOWEN, Gen. Supt., N. Y.

JNO. N. ABBOTT, Gen'l Pass'r. A'gt., N. Y.

**ERIE RAILWAY, now known as the NEW YORK, LAKE ERIE AND WESTERN RAILROAD.**

Arrangement of trains from Chambers street depot.

9 a. m.—Cincinnati and Chicago Day Express. Drawing room Coaches to Buffalo and Suspension Bridge.

6 p. m. (Daily)—Fast St. Louis Express, arriving at Buffalo at 8 a. m., connecting with fast trains to the West and Southwest. Pullman's best Drawing-room Sleeping Coaches to Buffalo.

7 p. m. (Daily)—Pacific Express for the West. Sleeping Coaches through to Buffalo, Niagara Falls, Cincinnati and Chicago without change. Hotel coaches through to Chicago.

7:15 p. m.—Emigrant train for the West.

Rutherford and Passaic, 6, 7:20, 7:50, 9:30, 10:20 a. m., 12 noon, 1:45, 3, 3:50, 4:40, 5:10, 5:30, 6:10, 6:30, 8, 10:30 p. m., 12 midnight. Sundays, 6, 8:30, 10:20 a. m., 1:45, 6:30 p. m., 12 midnight.

Paterson, 6, 7:20, 7:50, 9:30, 10:20 a. m., 12 noon, 1:45, 3, 3:50, 4:40, 5, 5:10, 5:30, 6:10, 6:30, 7:25, 8, 10:30 p. m. and 12 midnight. Sundays, 6, 8:30, 10:20 a. m., 1:45, 6:30 12 midnight.

Newark and Paterson via Newark. 6:45, 8:40, 11:30 a. m., 3:10, 4:20, 5:20, 6:10, 7:30 p. m., and 12 midnight Saturday nights only. Sundays, 9:15 a. m., 3:10, 6:30 p. m.

Suffern, 6, 7:50, 10:20 a. m., 1:45, 3:50, 5, 6:10, 7:15 p. m., and 12 midnight. Sundays, 6, 8:30, 10:20 a. m., 1:46, 6:30 p. m. and 12 midnight.

Warwick, 7:50 a. m., 4:30 p. m.

Newburg and Cornwall, 7:50, 9 a. m., 3:30, 4:30 p. m. Sunday, 8:30 a. m.

Rondout and Kingston, 9 a. m., 3:30 p. m. Sunday, 8:30 a. m.

Goshen, 6, 7:50, 9, 10:20, a. m., 3:30, 3:50, 4:30, 7, 7:15 p. m. Sunday, 6, 8:30, 10:20, a. m., 6:30, 7 p. m.

Middletown, 6, 7:50, 9, 10:20 a. m., 3:50, 4:30, 7, 7:15 p. m. Sunday, 6, 8:30, 10:20 p. m., 6:30, 7 p. m. The 9 a. m. and 4:30 p. m. trains connect with Midland Railroad at Main street.

Port Jervis, 7:50, 9, 10:20 a. m., 4:30, 6, 7, 7:15 p. m. Sunday, 8:30, 10:20 a. m., 6, 6:30 and 7 p. m.

Boats leave 23d street quarter of and quarter after each hour from 5:45 a. m. to 9:45 p. m. and at 10:45 and 11:45 p. m.

Tickets for passage and for apartments in drawing-room and Sleeping coaches can be obtained and orders for the checking and transfer of baggage may be left at the Company's Offices, Nos. 261, 401 or 957 Broadway, 187 West street, New York, No. 2 Court street, Brooklyn; or at the Company's Depots.

Emigrant Agency, No. 5 Battery Place.

Express trains from the West arrive in New York at 7:25 and 11:25 a. m. and 10:10 p. m.

JNO. N. ABBOTT, Gen'l Pass'r Agent, New York.

**NEW YORK CENTRAL AND HUDSON RIVER RAILROAD**—Commencing November 6, 1882, through trains will leave Grand Central Depot:

8 a. m., Western and Northern Express to Rochester and Montreal with drawing-room cars; also to Saratoga.

8:40 a. m., Special Express for Chicago, daily, stopping only at Albany, Syracuse, Rochester, Buffalo, Erie, Cleveland and Toledo.

10:30 a. m. Chicago Express, drawing-room cars to Canandaigua, Rochester and Buffalo.

11 a. m., to Albany and Troy, with connection to Utica, Saratoga, Glens Falls, Lake George and Rutland.

3:30 p. m., Albany and Troy special, Saturdays only.

4 p. m., Accommodation to Albany and Troy.

6 p. m., St. Louis Express, with sleeping cars for St. Louis; running through every day in the week, also Niagara Falls, Buffalo, Toledo and Detroit.

6:30 p. m., Express daily except Sunday, with sleeping cars to Syracuse and to Auburn Road, also to Saratoga and Montreal.

9 p. m., Pacific Express, daily, with sleeping-cars for Rochester, Buffalo, Cleveland, Toledo, Detroit, Chicago and Lowville.

11 p. m., Night Express, with sleeping-cars to Albany and Troy. Connects with morning trains for the West and North.

Tickets on sale at No. 5 Bowling Green, 252 and 413 Broadway, and at Westcott's Express Offices, 3 Park Place and 785 and 942 Broadway, New York, and 333 Washington street, Brooklyn.

C. B. MEEKER,  
Gen. Passenger Agent.

J. M. TOUCEY, Gen. Sup't.

**NO OTHER LINE IS SUPERIOR TO THE  
FITCHBURG RAILROAD  
HOOSAC TUNNEL ROUTE  
WEST.****8.30 A. DAY EXPRESS.**

Wagner Palace Drawing-Room Cars Attached.

Running through to Syracuse, N.Y., where connection is made with through sleeping-cars for Cincinnati, Cleveland, Toledo, **DETROIT AND CHICAGO.****3.00 P. CINCINNATI  
M. EXPRESS.**Pullman Sleeping Car attached, running through to Cincinnati without change. (Only Line running Pullman Cars from Boston.) This car runs *via* Erie Railway and N.Y., P. & O. R.R., making direct connection for Louisville, St. Louis, Kansas City, New Orleans, and all points in Texas and New Mexico.**3.00 P. ST. LOUIS  
M. EXPRESS.**

THE ONLY LINE which runs a THROUGH SLEEPING-CAR from

**BOSTON TO ST. LOUIS WITHOUT CHANGE!**

ARRIVING AT 8.00 A.M. SECOND MORNING.

Through sleeping car for Buffalo, Toledo, Fort Wayne, Logansport, Lafayette, Danville Tolono, Decatur and St. Louis, making direct connection with through Express Trains for Kansas, Colorado, Texas, and all points in the

**SOUTHWEST.****6.00 P. PACIFIC  
M. EXPRESS.**The only line running a through sleeping-car *via* Niagara Falls, Canada Southern Railway and Detroit without change, arriving at Chicago at 8.00 A.M. second morning, making sure connections with through Express Trains for Iowa, Nebraska, Kansas, Colorado, the Pacific Coast, Wisconsin, Minnesota and all points in the**WEST AND NORTHWEST.**

THE ABOVE TRAINS RUN DAILY, SUNDAYS EXCEPTED.

This Great Short Line passes through the most celebrated scenery in the country, including the famous HOOSAC TUNNEL, four and three-quarters miles long, being the longest Tunnel in America, and the third longest in the world.

Tickets, Drawing-Room and Sleeping-Car Accommodations may be secured in Advance by Applying to or Addressing

**250 WASHINGTON STREET, BOSTON. 250**

JOHN ADAMS, General Superintendent. F. O. HEALD, Acting Gen'l Passenger and Ticket Agent.

In effect October 23d, 1882, and subject to changes.



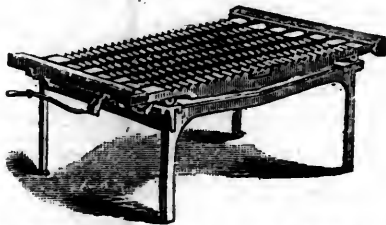
## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	246,062	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,507,857	2,297,971	2,225,179	2,409,410	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,306	230,022	203,562	2,702,762
1882.....	210,455	209,708	208,981	207,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	1,855,477	2,184,209	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,000	2,086,858	2,270,444	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,301	1,644,670	1,591,052	1,560,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	261,211	350,124	350,124	404,562	383,202	385,586	373,370	379,029	392,921	432,615	3,981,290
1882.....	307,498	315,100	405,779	356,558	400,420	363,109	331,480	394,555	482,997	546,671	517,595	375,796	4,973,052
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,056	192,299	177,161	229,858	228,653	221,320	211,014	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	383,111	514,767	548,284	582,887	606,193	589,287	638,432	547,055	624,728	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	626,728	6,349,657
<b>HANTRIAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	125,601	152,671	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,503	249,252	239,891	2,303,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,780	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	102,605	203,677	200,064	199,824	199,125	272,114	247,332	225,678	200,450	192,622	2,487,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,113	206,072	278,814	273,100	269,046	250,998	205,212	2,641,675
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,744	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,916	160,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,212	2,433,224
1882.....	159,676	158,590	148,166	141,957	134,378	136,184	135,174	137,475	157,874	267,433	295,110	307,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	154,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	261,082	3,408,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	240,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	370,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	509,663	667,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	102,984	216,210	312,705	412,024	393,260	434,085	534,363	583,655	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,23								

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The W. Ryder Double-Acting Grate Bars are so constructed as to rest upon a frame with friction rollers, and by means of a lever attached to the front rocking bar, a reverse or reciprocal motion is produced in each bar which effectually breaks up the clinkers, and removes all the ashes from the bottom of the furnace.

By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large, and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop its working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.



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## RAILROAD, TRAMWAY AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

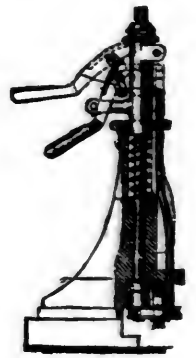
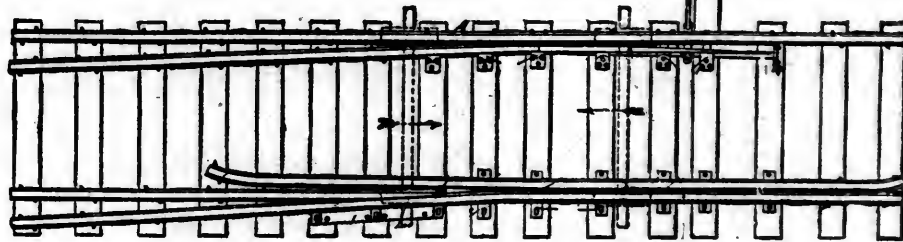
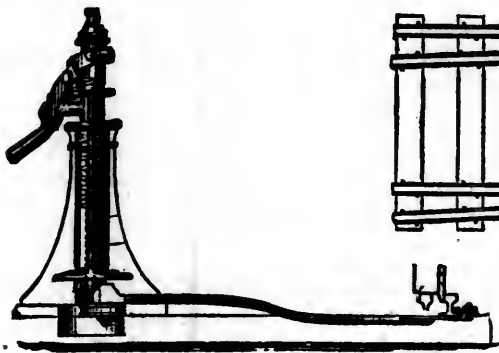
Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus(*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Mar. '83 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Fe...100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S. 100	4,096,135	.....	July '81 108	Warren (N. J.) .....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point...100	1,232,200	semi-an	Feb. '83 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Mar. '83 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil. pref. 100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv. 100	25,000,000	semi-an.	Feb. '83 3	West Jersey.....100	1,359,750	semi-an.	Mar. '83 38
Avon, Genesee & Mt. M*100	225,000	semi-an	Jan. '82 3	Lowell & Andover... 100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington & Weld'n. 100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio. 100	14,792,566	semi-an	Nov. '82 5	Lykens Valley..... 100	600,000	q'arterly	Jan. '83 2 1/2	Will., Col., & Aug. ....100	960,000	semi-an.	Jan. '83 3
" " pref. 100	5,000,000	semi-an	Jan. '83 3	Maine Central..... 100	3,603,300	semi-an.	Feb. '83 2 1/2	Winchester & Poto'c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manchester & Law. . 100	1,000,000	semi-an.	Nov. '82 5	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	Manhattan..... 100	13,000,000	.....	.....	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany...100	20,000,000	q'arterly	Mar. '83 2	" " 1st pref. 100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos. & N. Y. Air Line pf. 100	2,795,227	q'arterly	June '82 1	" " 2d pref. 100	6,500,000	q'arterly	Jan. '83 1 1/2				
Bos., Cl. F. & N. B. pref. 100	1,750,100	semi-an	Oct. '82 3 1/2	Marq. Hout. & Ont. 100	2,306,600	.....	Feb. '83 4				
Bos., Conc. & Mont. pf. 100	800,000	semi-an	Nov. '82 3	" " pref. 100	2,259,026	semi-an.	Feb. '83 4				
Boston and Lowell... 500	3,940,000	semi-an	Jan. '83 2 1/2	Massachusetts*.....100	400,000	semi-an.	Feb. '83 3				
Boston and Maine..... 500	6,921,274	semi-an	Nov. '82 4	Metropolitan..... 100	6,500,000	q'arterly	Oct. '82 1 1/2				
Boston & Providence... 100	4,000,000	semi-an	Nov. '82 4	Michigan Central.....100	18,738,204	.....	Feb. '83 2				
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Middlesex Central.....100	280,000	semi-an.	Feb. '83 3				
Bos., Revere B. & Lynn. 100	419,400	semi-an	Jan. '83 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5				
Buffalo, N. Y. & Erie* 100	950,000	semi-an	Dec. '82 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2				
Buff., N. Y. Phila. pref. 50	6,000,000	q'arterly	Mar. '83 1 1/2	Missouri Pacific.....100	28,169,800	q'arterly	Apr. '83 1 1/2				
Camden & Atlantic. . 50	377,400	q'arterly	Nov. '82 3	Mobile & Montgomery 100	3,022,517	semi-an.	Feb. '80 2 1/2				
" " pref. 50	880,650	q'arterly	Nov. '82 4	Morris and Essex... 50	15,000,000	semi-an.	Jan. '83 3 1/2				
Camden & Burl. Co. 100	381,925	semi-an	Jan. '83 3	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6				
Canada Southern..... 100	15,000,000	.....	Feb. '81 2 1/2	Nashua and Lowell. 100	800,000	semi-an.	Nov. '82 4				
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua & Rochester. 100	1,305,800	semi-an.	Oct. '82 1 1/2				
Catawissa*..... 50	1,159,500	annual	Oct. '82 2 1/2	Nashv. & Decatur... 100	1,827,000	semi-an.	Dec. '82 3				
" " pref. 50	2,000,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Jan. '82 1 1/2				
" " new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Naugatuck..... 100	2,000,000	semi-an.	Jan. '83 5				
Cayuga and Susq*... 50	589,110	semi-an	Jan. '83 4 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Mar. '83 3				
Cedar Rapids & Mo. R* 100	6,850,400	q'arterly	Feb. '83 1 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Jan. '83 1				
" " pref. 100	769,600	semi-an	Feb. '83 3 1/2	New London North*100	1,500,000	q'arterly	Jan. '83 1 1/2				
Central of Georgia..... 100	7,500,000	semi-an	Dec. '82 4	N. Y. Cen. & Hud. R. 100	89,428,330	q'arterly	Apr. '83 2				
Central of New Jersey 100	18,563,200	q'arterly	July '76 2 1/2	N. Y. and Harlem.... 100	7,950,000	q'arterly	Jan. '83 4				
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	" " pref. 100	1,500,000	q'arterly	Jan. '83 4				
" " pref. 50	411,550	semi-an	Jan. '83 3	" " City Line.....	.....	annual	Apr. '83 2				
Central Pacific..... 100	59,275,500	semi-an	Feb. '83 3	N. Y., Lack. & West. 100	10,000,000	q'arterly	Jan. '83 1 1/2				
Cheshire preferred..... 100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West. 100	77,087,600	.....	.....				
Chicago and Alton..... 100	11,181,741	semi-an	Mar. '83 4	" " pref. 100	77,087,500	annual.	Jan. '83 6				
" " pref. 100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart. 100	15,500,000	semi-an.	Jan. '83 5				
Chi., Burl. & Quincy. 100	69,508,105	q'arterly	Mar. '83 2	N. Y., Ont. & West. 100	2,000,000	.....	Mar. '83 12				
Chi., Iowa & Nebr.*100	3,916,200	semi-an	Jan. '83 4	N. Y., Prov. & Boston. 100	3,000,000	q'arterly	Feb. '83 2				
Chi., Mil. & St. Paul. 100	20,404,261	semi-an	Apr. '83 3 1/2	Niag. Bridge & Canad*100	1,000,000	semi-an.	Oct. '82 3				
" " pref. 100	14,401,483	semi-an	Apr. '83 3 1/2	North Carolina*.....100	3,000,000	semi-an.	Mar. '83 3				
Chi. & N. Western..... 100	14,988,257	semi-an	Dec. '82 3 1/2	" " pref. 100	1,000,000	semi-an.	Mar. '83 3				
" " pref. 100	21,525,353	q'arterly	Mar. '83 2	Norfolk & Western pref. 100	15,000,000	q'arterly	Dec. '82 1				
Chi., R. I. & Pacific. 100	14,960,000	q'arterly	Feb. '83 3	North Pennsylvania. 50	4,527,150	q'arterly	Feb. '83 1 1/2				
Chi. and West Mich. 100	6,151,000	q'arterly	Feb. '83 3	Northern Central.... 50	6,142,000	semi-an.	Jan. '83 4				
Chi., St. P., M. & O. pref. 100	10,390,000	q'arterly	Apr. '83 1 1/2	Northern N. Hampsh. 100	3,068,400	semi-an.	Dec. '82 3				
Cin., Ham. & Dayton... 100	3,500,000	semi-an	Jan. '83 3	Northern Pacific pref. 100	41,909,132	.....	Jan. '83 11				
C. Ind., St. L. & Chi. 100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5				
Cin., Sand. & Cleve. pf. 50	429,037	semi-an	Nov. '82 3	Oregon & Transcont'l. 100	40,000,000	q'arterly	Apr. '83 1 1/2				
Clev. Col. Cin. & Ind. 100	14,991,800	.....	Feb. '83 2	Old Colony..... 100	7,333,800	semi-an.	Jan. '83 3 1/2				
Clev. and Pittsburg* 50	11,244,336	q'arterly	Mar. '83 1 1/2	Oregon Improv. Co. 100	5,000,000	semi-an.	Mar. '83 3 1/2				
Columbus & Xenia* 50	1,786,200	q'arterly	Mar. '83 2	Oregon R'way & Nav. 100	18,000,000	q'arterly	Feb. '83 2 1/2				
Col., Hock. Val. & Tol. 100	10,316,500	.....	Jan. '83 2 1/2	Oswego & Syracuse... 100	1,320,400	semi-an.	Feb. '83 4 1/2				
Concord..... 50	1,500,000	semi-an	Nov. '82 5	Panama..... 100	7,000,000	semi-an	Jan. '83 6 1/2				
Concord and Ports* 100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Hudson* 100	630,000	semi-an.	Jan. '83 4 1/2				
Conn. & Passump. Riv. 100	2,244,400	semi-an	Feb. '83 3	Paterson & Ramapo. 100	248,000	semi-an.	July '82 4				
Connecticut River... 100	2,100,000	semi-an	Jan. '83 4	Pember & Hight'n*... 10	342,150	semi-an.	Jan. '83 3				
Cumberland Valley... 50	1,292,950	q'arterly	Apr. '83 2 1/2	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2				
" " 1st pref. 50	241,900	semi-an	Apr. '83 4	Pennsylvania Co. .... 50	20,000,000	annual	Dec. '82 4				
" " 2d pref. 50	243,000	semi-an	Apr. '83 4	Peoria & Bureau Val* 100	1,200,000	semi-an.	Feb. '83 4				
Danbury & Norwalk. 50	600,000	.....	Apr. '82 1 1/2	Philadelphia & Erie* 50	7,013,700	semi-an.	.....				
Dayton and Mich.*... 50	2,402,573	semi-an	Oct. '82 1 1/2	" " pf. 50	2,400,000	semi-an.	Jan. '75 4				
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	Phil. Ger. & Norrist'n* 50	2,231,900	q'arterly	Dec. '82 3				
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2				
Del. & Bound Brook* 100	1,652,000	q'arterly	Feb. '83 1 1/2	" " pref. 50	1,551,800	q'arterly	July '76 3 1/2				
Del., Lack. & Western 50	26,700,000	q'arterly	Jan. '82 2	Phila. and Trenton. 100	1,259,100	q'arterly	Jan. '83 2 1/2				
Denver & Rio Grande. 100	29,160,000	q'arterly	Jan. '82 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4				
Detroit, Lans. & Nor. 100	1,825,600	semi-an	Feb. '83 3	Pittsb., Ft. W. & Chi.*100	19,714,285	q'arterly	Jan. '83 1 1/2				
" " pref. 100	2,503,380	semi-an	Feb. '83 3 1/2	" " Special Imp. 100	6,770,900	q'arterly	Jan. '83 1 1/2				
Dubuque & Sioux C'y*100	5,000,000	semi-an	Oct. '82 3	Pittsfield & N. Adams. 100	450,000	semi-an.	Jan. '83 2 1/2				
East Pennsylvania*... 50	1,709,550	semi-an	Jan. '83 3	Portl., Saco & Ports. 100	1,500,000	semi-an.	Jan. '83 3				
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3	Providence & Worcester 100	2,000,000	semi-an.	Jan. '83 3				
Eastern (N. H.)..... 100	492,500	semi-an	Dec. '82 1 1/2	Rensselaer & Saratog.*100	7,000,000	semi-an.	Jan. '83 4				
Eel River..... 50	3,000,000	q'arterly	Mar. '83 1	Richmond & Danv... 100	5,000,000	q'arterly	Aug. '82 2				
Elmira & Williamspt* 50	500,000	semi-an	Nov. '82 1 1/2	Richmond & Petersb. 100	1,009,300	semi-an.	Aug. '82 2				
" " pref. 50	500,000	semi-an	Jan. '83 3 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '83 3				
Erie and Pittsburg*... 50	1,998,400	q'arterly	Dec. '82 1 1/2	Rome Water & Ogden. 100	5,293,900	.....	Jan. '83 3				
Evansville & Terre H. 100	100,000	semi-an	Jan. '83 6 1/2	Rutland preferred..... 100	4,000,000	semi-an.	Sept. '82 1				
Fitchburg..... 100	4,500,000	semi-an	Jan. '83 3	Spuytend Du'vil & Pt. M. 100	980,000	semi-an.	Jan. '83 4				
F. & P. Marquette pf. 100	6,500,000	semi-an	Jan. '83 3 1/2	St. L., Alt. & T. H. pref. 100	2,468,406	.....	Dec. '82 4				
Ft. Wayne & Jack. pf. 100	2,000,000	.....	May '82 2	St. L. & S. Fran. 1st pref. 100	4,500,000	semi-an.	Feb. '83 3 1/2				
Georgia..... 100	4,200,000	q'arterly	Apr. '83 4	St. L., Jac'ville & Chic. 100	1,293,000	.....	Aug. '82 4 1/2				
Granite..... 100	1,250,000	semi-an	Jan. '83 3 1/2	" " pref. 100	1,034,000	.....	Aug. '82 4 1/2				
Greenw' h & Johnson v. 100	118,000	semi-an	Jan. '83 3	St. P. & Duluth pref. 100	4,705,000	semi-an.	Jan. '83 3 1/2				
Han. & St. Jo. pref. 100	5,083,024	semi-an	Feb. '83 3	St. P., Minn. & Man. 100	20,000,000	q'arterly	Feb. '83 2				
Harrisburg & Lancaster. 50	1,182,500	semi-an	Jan. '83 3	Schuylkill Valley*... 50	576,050	semi-an.	Jan. '83 2 1/2				
H'ford & Conn. West'n 100	2,700,008	.....	Nov. '82 3	Seaboard & Roanoke. 100	1,229,600	semi-an.	Nov. '82 5				
Housatonic pref. .... 100	1,180,000	q'arterly	Jan. '83 2	Shamokin V. & Pottav. 50	669,450	semi-an.	Feb. '83 3				
Illinois Central..... 100	39,000,000	semi-an	Mar. '83 4	Shore Line*..... 100	1,000,000	semi-an.	Jan. '83 4				
Ia. Falls & Sioux City*100	4,623,500	q'arterly	Mar. '83 4	Sioux C. & Pacific pref. 100	160,000	semi-an.	Oct. '82 3 1/2				
Iowa R. R. & Land Co. 100	7,620,000	q'arterly	Feb. '83 1 1/2	South Br. (N. J.)*... 100	438,300	semi-an.	Jan. '83 3				
Jefferson v. Mad. & Ind. 100	2,000,000	q'arterly	May '82 1	South Western (Ga.)*100	3,892,300	semi-an.	Dec. '82 3 1/2				
Joliet and Chicago*... 100	1,500,000	q'arterly	Jan. '83 1 1/2	Stockbridge & Pitts.* 100	448,700	q'arterly	Jan. '83 1 1/2				

# THE RAMAPO IRON WORKS,

MANUFACTURERS OF

**The Tracy Safety Switch,** Safety Switch Stands and Stub Switch Stands; Keyed, Riveted, and Bolted Frogs of all Weights and Patterns. A specialty of an Elastic Yoked Stiff Frog and Spring Frog of the Tracy Pattern; Reversible and Interchangeable Double and Single Rail Crossings of any desired Pattern; Car, Bridge, and Turn Table, Heavy and Light Castings, and

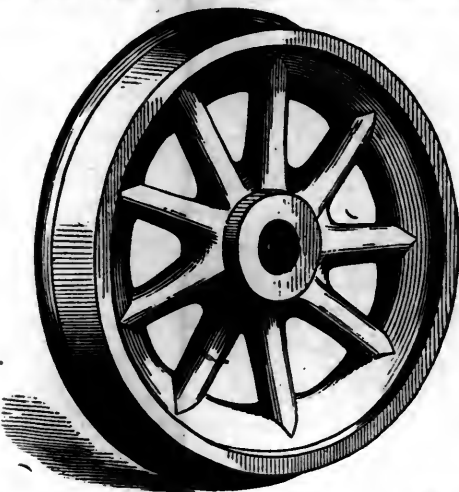
**General Railroad Equipment.**



WORKS AND OFFICE: RAMAPO ROCKLAND CO. NEW YORK.

F. W. SNOW, Superintendent.

## THE RAMAPO WHEEL AND FOUNDRY COMPANY.



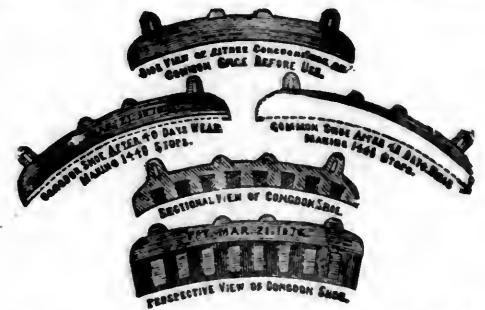
Manufacturers of

Wheels for Drawing-Room and Sleeping Coaches, Tenders, Locomotives, Passenger and Freight Cars.

W. W. SNOW, Supt., RAMAPO, Rockland Co., N. Y.

Axles Furnished and Wheels Fitted.

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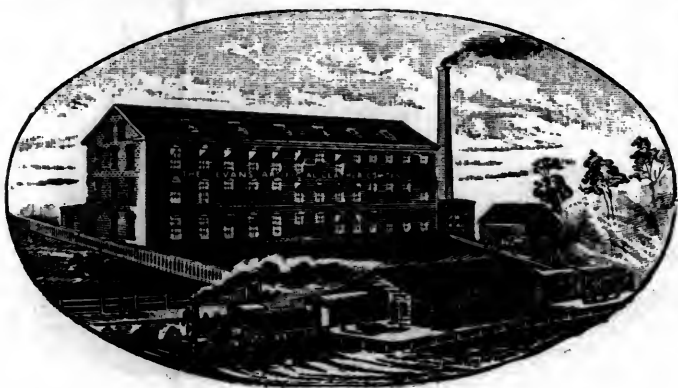


This improvement consists of a shoe having embedded in its body of cast iron, pieces of wrought iron, steel, malleable iron, or other suitable metal, which increase surprisingly its resistance to wear. All communications should be addressed to

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IF NOT HERE ARE SOME GOOD REASONS WHY YOU SHOULD USE IT.

It is a perfect substitute for Leather in nature and appearance.

It is the only substitute that has proved practical and satisfactory.

It is unaffected by HEAT or COLD, and is impervious to OIL or WATER.

It is made in light and heavy weights, so that it can be substituted for cheap as well as costly leather.

IT COSTS LESS,

Varying from one-third to two-thirds, according to the kind of leather for which it is substituted

WHERE EVERY ITEM COUNTS.

It is manifestly to the advantage of the Carriage Builder and Upholsterer to use a material that cheapens the cost of production while taking nothing from the looks and style of the job.

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Best quality and simplest plan in use.



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Cheaper, stronger and less liable to get out of repair than tin. Any mechanic can apply it. Sample Circular and Price List free by mail at request.

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MANUFACTURERS OF  
Pentz Patent Rein Holders and Davis's Rock Drill Machines.

## Continuous Automatic FREIGHT BRAKES.

Requiring no other Connection  
between Cars than the or-  
dinary Coupling-Link  
and Pin.

**SIMPLE, DURABLE, AND EFFICIENT.**

Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

**PATENTED MAY 23, 1882.**

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**WM. C. SCHULTZE,**

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Locomotives—Two Second-hand Narrow-Gauge Engines in good order.

One Second-hand "Tank" Narrow-Gauge Engine, 10 tons. Several Second-hand Standard-Gauge Locomotives in good order, immediate delivery.

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Six new 4ft. 8½ Gauge Locomotives, cylinders 17x24 weight 35 tons. November and December delivery.

Two new 3ft. Gauge Locomotives, Cylinders 12x18, weight 20 tons. December and January delivery.

Cars—Passenger and Freight Cars of all descriptions for early delivery.

Rails—16lb., 20lb., 30lb., 35lb. and 56lb. Rails.

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Narrow-Gauge Rolling-stock a specialty.

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MANUFACTURERS OF

**Superior Oak and Chestnut Lumber,  
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Established 1863

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## COACH AND CAR VARNISHES.

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"36 per cent of coal saved and the car kept noticeably warmer!"

by using THE SALMON CAR HEATER.

It Insures Safety from Fire in case of Accident,

Economy in Fuel and RAPID CIRCULA-

TION. It heats quickly, is SELF-REGULA-

TING, and can be used for

either STEAM OR HOT WATER.

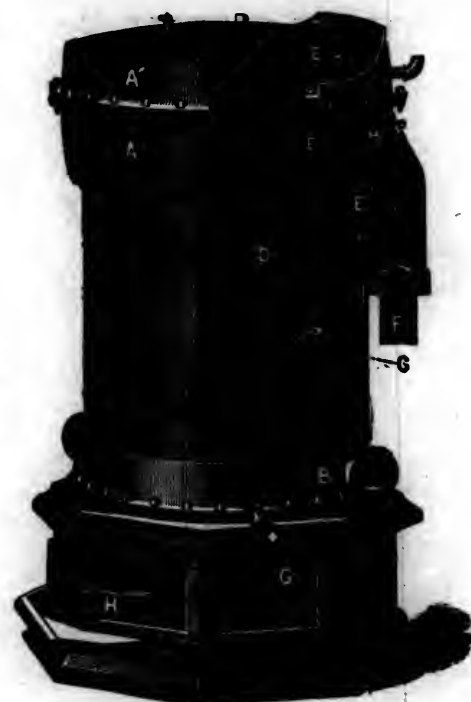
The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low State of combustion without danger of chilling the fire.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

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## FINANCIAL DEPARTMENT.

## THE OUTLOOK OF TRADE AND FINANCE.

NEXT to the future of the money market, the question of topmost concern in trade circles is the effect of the new tariff. The course of foreign exchange is variously looked upon; but in reality the sunshine of the next six weeks has more to do with it than any other single cause. If the crop-promise over a large part of the United States is good we shall have cereals, cotton and meats to export sufficient in amount to liquidate the accounts we are running up on the other side for metals, textile fabrics and fancy articles. If, on the other hand, the crop-prospects should be bad, we shall have to resort to credit and also to curtail our importations. But if, as is likely, it is bad in some places, and good in other places, so as to present a mixed prospect, then we may look for the same hesitating fluctuations as have prevailed during the year past. Of course, the prospects in the grain growing countries of Europe are equally concerned. If they are promising in Europe, prices will drop here; if, on the other hand, the crops are but scanty there, prices will be firmer here, and we may look for importations of gold, or, what is the equivalent, the return of our interest-bearing securities.

The American railroad securities held in Europe are now, with few exceptions, of the stable interest-yielding class. Those exceptions, such as the Atlantic and Great Western, Grand Trunk and southern roads are all improving in character; so that any reflux to this side should be just as satisfactory as the inflow of bullion itself, though the effect might not be so marked in lifting market prices.

The first effect of the tariff is to introduce confusion and uncertainty into the working of our customs revenues. It will require a long series of decisions and appeals in the Department to establish and confirm the true intent and meaning of the present law. In many respects it is admitted by advocates of protection as well as of free trade, to be superior to the law it repeals. But it by no means follows that this is the end of tariff tinkering. A year hence Congress re-convenes, with the Democrats in the majority in the Lower House, when efforts will be made in favor of lower duties; but such is the power of the manufacturing interest, and such is the ingrained belief on the part of our middle classes that free trade means lower wages and corresponding wretchedness for the laboring classes, that it is to be doubted if they can succeed.

The principal change, so far as it concerns railroads, is a reduction of \$11 a ton; that is, from \$28 to \$17 on steel rails. Nine-tenths of all the track being laid, or re-laid in this country consists of steel, and the home product falls more than 300,000 tons per annum below the total demands. There will be less railroad building during 1883 than during 1882. This, too, is a wholesome check. There will, it is safe to say, be less cutting of rates, and desperate financering. The true law which governs the recurrence of business exaltations and depressions has not yet been so clearly denoted as to predict with certainty their recurrence. The migration of the adult able bodied population, the outbreak of devastating wars, the astonishing multiplication of power by inventions and control of natural forces, are purely human elements in the problem likely to throw confusion into all deductions drawn from past history.

## Financial Review.

WEDNESDAY EVENING, MARCH 14, 1883.

RATES for call loans on stocks this forenoon were 12, 13, 14, 15, and 13, successively, up to 12.30 o'clock. At the same time the rate was 4 per cent. on Government bonds. From 12.30 to 2 o'clock, the rates were 13, 14 and 12½ per cent., and in the last hour 14, 12, 13, 14, 13, and 10 per cent.

Secretary Folger has ordered the preparation of a new obverse design for the recently issued nickel five cent piece. This design will bear the word "cents" in conspicuous letters.

The posted rates for foreign exchange were 481½@484. The actual rates were as follows, viz: Sixty-day bills, 480½@481; demand, 483@483½; cables, 483@484. Commercial bills were 47½@479½. Continental bills were as follows, viz: Francs, 523@523½, and 521½@520½; Reichsmarks, 94½@95 and 94½@95; Guilders, 39½ and 40.

It is expected that Assistant Treasurer Wyman will be promoted to fill the vacancy created by the resignation of Mr. Gilfillan from the office of Treasurer of the United States.

At the regular quarterly meeting of the directors of the Western Union Telegraph Company, held to-day, the following statement was presented showing the condition of the company at the close of the quarter ending December 31, 1882, viz: Surplus, October 1, 1882, as per last quarterly report, \$2,667,097.33; net revenues quarter ending December 31, 1882, \$2,053,145.04; total, \$4,720,242.37; from which deduct appropriations for dividend of 1½ per cent., paid January 15th, \$1,199,794.80; interest on bonded debt, \$106,562.33; sinking funds, \$20,000—amounting to \$1,326,357.13, leaving a surplus of \$3,393,885.24. The estimated net revenues for the quarter ending March 31st inst. will be about \$1,750,000, which added to the above surplus, makes \$5,143,885.24; from which, appropriating for interest on bonded debt, \$106,500, and for sinking funds \$20,000, leaves a balance of \$5,017,385.24; out of which a dividend of 1½ per cent. has been declared, payable April 16,

amounting to \$1,339,750, leaving a surplus of \$3,617,635.24. The business of the calendar year ended December 31, 1882, being fully balanced up, shows gross revenues for the year of \$18,398,968.26, and net profits, \$7,624,833.21. The rentals of all leased lines and cables are charged in current expenses, leaving only the interest and sinking fund on bonded debt, amounting to less than \$470,000, as fixed charges on net profits. Deducting this, leaves the net profits for the year 1882 over \$7,150,000 above fixed liabilities, being about 9 per cent. on the capital stock outstanding.

A dangerous counterfeit of the standard silver dollar has made its appearance in Ohio and Indiana. The base coin has the exact weight, ring and appearance of the genuine, and resists the acid test unless the outer coating of silver is penetrated. It would readily be accepted as genuine by merchants. Several pieces have been discovered only upon reaching a sub-treasury.

At a meeting of the directors of the Chicago, Milwaukee and St. Paul Railway Company, held in this city on the 12th inst., a dividend of 3½ per cent on the common and preferred stocks was declared payable April 16. A statement was presented showing that the balance of income account January 1, 1882, was \$5,593,010.35. The reduction by distribution among stockholders pro rata of 71,019.48 shares of common stock, one-half of which the stockholders received without cost, was \$3,550,794, leaving a balance of \$2,042,036.85, which was further reduced by a dividend of 3½ per cent, April 15, 1882 (\$1,218,201.04), to \$823,835.81. The gross earnings in 1882 were \$20,386,725.86, and the operating expenses and taxes, \$12,186,073.21, leaving \$8,200,652.65. The receipts from other sources were \$623,813.62, making a total of \$8,824,466.27. The interest on bonds was \$4,786,053.50, and the dividend of 3½ per cent in October, 1882, \$1,242,841.04, the two together making \$6,028,894.54, which, subtracted from the preceding receipts, leaves \$2,795,571.73. The dividend payable in April next amounts to \$1,552,311.04, reducing the last sum to \$1,243,260.69, and leaving a balance of the income account of \$2,067,096.50. The unfunded liabilities on Dec. 31, 1882, were: Bills payable, \$2,712,038.48; unpaid vouchers and payrolls, \$2,216,629.84; miscellaneous account and current balances, \$2,141,916.27; unclaimed dividends and interest \$83,162.89; incumbrances assumed, \$6,755; total, \$7,160,502.48. Applicable to this account, on the same date, were: Cash, \$2,969,732.42; materials to be used in 1883, \$1,495,112.82; cash due from agents of other companies and miscellaneous accounts, \$572,124.44; cash due from sales of lands, \$1,787,508.90; bills receivable, \$1,600; total, \$6,826,078.58. This leaves a deficiency of \$334,423.90.

The Chief of the Bureau of Statistics at Washington reports that the total values of the exports of petroleum and petroleum products from the United States during the month of January, 1883, were \$3,506,953, and during January, 1882, \$2,759,087. For the seven months ended January 31, 1883, \$25,910,924, and for the seven months ended January 31, 1882, \$31,771,690.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Mar. 13.

	W.	7.	Th.	8.	F.	9.	Sat.	10.	M.	12.	Tu.	13.
Adams Express.....												
Albany and Susq..												
1st mortgage.....												
2d mortgage.....												107 1/2
American Express..	90	90	90	90	90	90	90	90	90	90	90	89 3/4
Burl., C. R. & Nor.												
1st mortgage 58..	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2
Canada Southern..	66 1/2	67 1/2	66 1/2	68 1/2	68 1/2	68 1/2	68 1/2	68 1/2	68 1/2	68 1/2	68 1/2	68 1/2
1st mortgage guar	95	96	96 1/2	96	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2
Canadian Pacific..												
1st mortgage 58..	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2
Central of N. Jersey	72	72 1/2	71 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2
1st mort. 1890..												
78, consol. ass..	110 1/2	111	111	111	111	111	111	111	111	111	111	111
78, convertible ass.												
78, Income.....	81	81	81	81	81	81	81	81	81	81	81	81
Adjustment.....												
Central Pacific.....	81	81	81 1/2	81 1/2	82 1/2	82 1/2	82 1/2	82 1/2	82 1/2	82 1/2	82 1/2	82 1/2
68, gold.....												
1st M. (San Joa.)												
1st M. (Cal. & Or.)												
Land grant 68..												
Chesapeake & Ohio.												
1st pref.....	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2
2d pref.....	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2
1st mort., series B	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2	91 1/2
Chicago and Alton.	133 1/2	135	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	134 1/2	135
Preferred.....												
1st mortgage.....												
Sinking Fund.....												
Chi., Bur. & Quincy	117 1/2	118 1/2	118 1/2	119 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2
78, Consol. 1903..												
Chi., Mil. & St. Paul	100 1/2	101 1/2	100 1/2	101 1/2	102 1/2	102 1/2	102 1/2	102 1/2	102 1/2	102 1/2	102 1/2	102 1/2
Preferred.....	118 1/2	118 1/2	119	119	119 1/2	119 1/2	119 1/2	119 1/2	119 1/2	119 1/2	119 1/2	119 1/2
1st mortgage 88..												
2d mort., 7 3-108.	121	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2	120 1/2
78, gold.....												
1st M. (La. C. div.)												
1st M. I. & M. div.)												
1st M. (I. & D. ext.)												
1st M. (H. & D. div.)	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2	118 1/2
1st M. (C. & M. div.)												
Consolidated S. F.												
Chi. & Northwestern	132 1/2	132 1/2	132 1/2	133 1/2	133 1/2	133 1/2	133 1/2	133 1/2	133 1/2	133 1/2	133 1/2	133 1/2
Preferred.....	146 1/2	146 1/2	148	148 1/2	148 1/2	148 1/2	148 1/2	148 1/2	148 1/2	148 1/2	148 1/2	148 1/2
1st mortgage.....												
Sinking Fund 68..	112	112	112	112	112	112	112	112	112	112	112	112
Consolidated 78..	131	131	131	131	131	131	131	131	131	131	131	131
Consol. Gold b'ds	125	125	125	125	125	125	125	125	125	125	125	125
Do. reg.....												
Chi., R. Isl. & Pac.	123	123 1/2	123 1/2	124	124	124	124	124	124	124	124	124 1/2
68, 1917, c.....	125 1/2	125 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2	124 1/2
Chi., St. P. Minn. & O.	48	48 1/2	48 1/2	48 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2
Preferred.....	107 1/2	107 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	109
Clev., Col. & Ind.	73 1/2	73 1/2	74 1/2	74	74 1/2	74 1/2	74 1/2	74 1/2	74 1/2	74 1/2	74 1/2	74 1/2
Clev. & Pittsburg gr.												
78, Consolidated.												
4th mortgage.....												
Col., Chi. & Ind. Cent	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
Del. & Hud. Canal.	108	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2	108 1/2
Reg. 78, 1891.....	114	114	114	114	114	114	114	114	114	114	114	114
Reg. 78, 1884.....												
78, 1894.....												
Del., Lack. & Western	123 1/2	124 1/2	124 1/2	125	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2
1st mortgage 78..												
Consol. 1907.....												
Erie Railway.....												
1st mortgage.....												
2d mort. 58, ext..												
3d mortgage.....												
4th mort. 58, ext.												
5th mortgage.....												
78, Consol. gold..	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2
Great West. 1st mort												
2d mortgage.....	100	100	100	100	100	100	100	100	100	100	100	100
Hannibal & St. Jo..												
Preferred.....	81 1/2	81	81	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2	81 1/2
88, Convertible.....												
Houston & Tex. Cen												
1st mortgage.....	109	109	110	109 1/2	109 1/2	109 1/2	109 1/2	109 1/2	109 1/2	109 1/2	109 1/2	109 1/2
2d mortgage.....												
Illinois Central....	143 1/2	144	144	144	144	144	144	144	144	144	144	144
Lake Shore & Mich So	109 1/2	110	110 1/2	111 1/2	111 1/2	111 1/2	111 1/2	111 1/2	111 1/2	111 1/2	111 1/2	110 1/2
Consol. 78.....												
Consol. 78, reg..												
2d Consolidated....	121	121	121	121	121	121	121	121	121	121	121	121
Lsh. & W. B. con. ass	102	102	102	102	102	102	102	102	102	102	102	102
Long Dock bonds..												
Louisville & Nash.	53 1/2	54 1/2	54 1/2	55	55 1/2	55 1/2	55 1/2	55 1/2	55 1/2	55 1/2	55 1/2	55 1/2
78, Consol. reg..												
Manhattan.....	45 1/2	46	46	46	46	46	46	46	46	46	46	46 1/2
1st pref.....												
Met. Elevated.....	79	79	79	79	79	79	79	79	79	79	79	79
1st mortgage.....	96 1/2	96 1/2	96 1/2	97 1/2	97 1/2	97 1/2	97 1/2	97 1/2	97 1/2	97 1/2	97 1/2	97 1/2
Michigan Central	94	94 1/2	94 1/2	95 1/2	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	95 1/2
78, 1902.....												
Minn. & St. Louis..	26 1/2	26 1/2	27 1/2	26 1/2	27	27	27	27	27	27	27	27
Preferred.....	59 1/2	60 1/2	60 1/2	61	61	61	61	61	61	61	61	61

Morris & Essex.....	123	.....	.....	122 1/2	.....
1st mortgage.....	135	134 1/2	.....	134 1/2	.....
2d mortgage.....	.....	.....	.....	.....	.....
78 of 1871.....	.....	.....	.....	.....	.....
78, Convertible.....	.....	.....	.....	.....	.....
78, Consolidated.....	121 1/2	.....	.....	.....	121 1/2
N. Y. Cen. & Hud. R.	127	127 1/2	127 1/2	129	129 1/2
68, S. F., 1883.....	.....	103 1/2	104 1/2	104 1/2	104 1/2
68, S. F., 1887.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	130	.....
1st mortgage, reg.	.....	.....	.....	.....	.....
N. Y. Elevated.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....
N. Y. & Harlem.....	.....	.....	.....	200	.....
1st mortgage.....	.....	.....	.....	.....	130
1st mortgage, reg	.....	.....	.....	.....	129 1/2
N. Y. Lake Erie & W	37 1/2	37 1/2	37 1/2	37 1/2	37 1/2
Preferred.....	.....	.....	.....	.....	.....
2d Consolidated..	95 1/2	96	97	97 1/2	96 1/2
New 2d 58 fund..	.....	.....	95	.....	96 1/2
N. Y. N. Hav'n & Hart	174	174	174 1/2	.....	173 1/2
North Mo. 1st mort	.....	.....	.....	.....	.....
Northern Pacific...	49	49 1/2	49 1/2	49 1/2	50 1/2
Preferred.....	85 1/2	86 1/2	86 1/2	86 1/2	86 1/2
Ohio & Mississippi.	.....	31 1/2	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....
Consolidated 78..	.....	.....	.....	.....	117
Consol. S. Fund..	116	.....	.....	.....	117
Pacific Mail S. S. Co	.....	.....	4 1/2	4 1/2	4 1/2
Pacific R. R. of Mo.	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	112 1/2
Panama.....	.....	.....	.....	.....	.....
Phila. & Reading..	53 1/2	53 1/2	53 1/2	53 1/2	52 1/2
Pitta. Ft. W. & Chi. gtd	.....	135	.....	136	.....
1st mortgage.....	136	.....	.....	.....	.....
2d mortgage.....	133 1/2	.....	.....	.....	.....
3d mortgage.....	.....	.....	.....	.....	.....
Pullman Palace Car	119	.....	.....	120 1/2	122
Quickell's Min'g Co	.....	.....	.....	.....	.....
Preferred.....	46	.....	.....	.....	.....
St. Louis & San Fran	.....	.....	.....	.....	.....
Preferred.....	.....	.....	49	.....	49
1st Preferred.....	.....	.....	.....	92	93
St. L., Alt'n & T. H.	67 1/2	68 1/2	70 1/2	71 1/2	70 1/2
Preferred.....	.....	.....	99	99 1/2	99 1/2
1st mortgage.....	.....	.....	.....	.....	.....
2d mort. pref.	.....	.....	.....	.....	.....
Income bonds....	.....	.....	.....	.....	105 1/2
St. L., Iron Mt. & S.	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....
2d mortgage.....	109	.....	.....	109 1/2	.....
Toledo and Wabash.	.....	.....	.....	.....	.....
1st mortgage.....	106	.....	.....	.....	.....
2d mortgage.....	.....	100 1/2	100	.....	100
78, Consolidated..	.....	.....	.....	.....	.....
St. Louis Division	.....	101 1/2	101 1/2	.....	101
Union Pacific.....	94 1/2	95 1/2	96 1/2	97 1/2	98 1/2
1st mortgage.....	.....	114	113 1/2	114	114 1/2
Land Grant 78..	.....	.....	.....	.....	.....
Sinking Fund 88.	114 1/2	.....	.....	.....	115 1/2
United States Ex...	.....	.....	60	.....	60
Wabash, St. L. & Pac	28 1/2	28 1/2	29	29 1/2	29 1/2
Preferred.....	47 1/2	48 1/2	48 1/2	49 1/2	49 1/2
New mort. 78..	.....	.....	.....	.....	.....
Wells-Fargo Ex....	122	.....	.....	122 1/2	.....
Western Pacific b'ds	110 1/2	.....	.....	.....	.....
Western Union Tel.	83 1/2	84 1/2	84 1/2	84 1/2	84 1/2
78.. S. F. conv., 1900	.....	.....	.....	.....	85
FEDERAL STOCKS :—					
U. S. 4s, 1907, reg...	.....	.....	.....	118 1/2	119
U. S. 4s, 1907, coup.	119	.....	.....	119 1/2	119 1/2
U. S. 4 1/2s, 1891, reg	.....	.....	.....	.....	.....
U. S. 4 1/2s, 1891, coup	.....	.....	.....	112 1/2	.....
U. S. 5s, cont'd at 3 1/2	.....	.....	.....	.....	.....
U. S. 3s, reg.....	.....	104 1/2	.....	.....	103 1/2
Dt. of Col. 3-65s, reg	108	.....	.....	.....	.....
Dt. of Col. 3-65s, coup	108	.....	.....	.....	.....

**Baltimore Stock Exchange.**

Closing Prices for the Week Ending Mar. 12.

Tu. 6. W. 7. Th. 8. F. 9. Sat. 10. M. 12.

Baltimore & Ohio...	199					
68, 1885...						
Central Ohio (\$50)...	50					
1st mortgage...	108 1/2					
Marietta & Cin. 7 1/2...						
1st mortgage, 7 1/2...	132 1/2					
2d mortgage, 7 1/2...	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	
3d mortgage, 8 1/2...	53 1/2					
Northern Cen. (\$50)...						
2d mort. 68, 1885...						
3d mort. 68, 1900...	118					
68, 1900, gold...	115					
68, 1904, gold...						
58, series A...	101	100 1/2				
58, series B...	95 1/2					
Pitts. & Connellsv. 7 1/2...	122					
Virginia 68 Consol. 41	39 1/2	40 1/2	41	41	42	
Consol. coupons...	47	47	45	45	44	
10-40 bonds...	36	35	34 1/2	36	34 1/2	
Def'd Certificates...						
New 38...	49	50	50 1/2	50 1/2	50 1/2	50 1/2
City Passenger R. R.						

**London Stock Exchange.**

Closing Prices—

Feb. 23. Feb. 16.

Baltimore and Ohio 58, 1927...	108	110	108	110
Central of N. J., \$100 shares...	70	75	70	75
Do. consol. mort. ....	113	115	113	115
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs. 82	83	82 1/2	83 1/2	
Do. 1st mort. 68, 1895-98.....	116	118	116	118
Det., G'd Haven & Mil. Equip bds. 118	120	120	118	120
Do. Con. M. sp. c. till '83 after 6p. c. 117	117	117	117	119
Illinois Central \$100 shares.....	146 1/2	147 1/2	148	149
Do. S. F. 58, 1903.....	106	108	105	107
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 68 95	97	97	95	97
Do. capital stock \$100 shares....	54	54	53 1/2	54 1/2
N. Y. Cen. & Hud. R. mort. bonds. 130	135	135	130	135
Do. \$100 shares.....	128 1/2	129 1/2	128 1/2	129 1/2
Do. mort. bonds (stg.).....	120	122	119	121
N. Y. Lake Erie & West. \$100 shs. 36	36 1/2	37 1/2	37 1/2	37 1/2
Do. 6 p. c. pref. \$100 shares....	78	80	80	82
Do. 1st Con. Mort. bonds (Erie) 128	132	128	128	132
Do. do. Funded Coupon bonds. 125	130	122	127	
Do. 2d Consol. Mort. bonds....	96	98	97	99
Do. do. Funded Coupon bonds....	96	98	96	98
N. Y., Pa. & Ohio 1st mort. bonds. 56	57	55 1/2	56 1/2	
Do. Prior Lien bonds (sterling). 103	106	103	106	
Pennsylvania \$50 shares.....	61	61 1/2	61	62
General Mortgage.....	122	124	122	124
Phil. & Erie Gen. mort. 68, 1920.....	115	117	115	117
Philadelphia & Reading \$50 shs. 26 1/2	26 1/2	27 1/2	28	
General Consol Mortgage.....	116	118	115	117
Do. Improvement Mortgage.....	106	108	105	107
Do. Gen. Mtg. '74, ex-def'd coup. 97	99	96	98	
St. L. Bridge 1st mort. gold bond. 122	124	122	124	
Do. 1st. pref. stock.....	92	96	92	96
S. P. of Cal., 1st mort 68, 1905-6. 108	109	107 1/2	108 1/2	
Union Pacific 1st mtg. 68, 1896-9. 116	118	116	118	
Wabash, St. L. & P. \$100 shares.. 23	29	30	32	
Do. \$100 pref. shares....	47	48	50 1/2	51 1/2
Do. gen. mort. bonds.....	77	79	79	81

**QUOTATIONS.**

THE following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—American Dock and Imp. 58, 83 1/2; Atlantic and Pacific Western div. 1st, 93; Atchison, Colorado and Pacific 1st, 90; Baltimore and Ohio, Parkersburg div. 1st, 114; Buffalo, New York and Philadelphia 1st, 97; Boston and New York Air Line pref., 80; Buffalo and Erie 78, new, 120; Chicago and Northwestern S. F. 58, 101 1/2; do. Interest bonds, 103 1/2; Chicago, Burlington and Quincy, Iowa div. 1st, 88 1/2; Columbia and Greenville pref. 41; Cedar Falls and Minnesota, 13 1/2; Chesapeake and Ohio currency 68, 53 1/2; do. 1st, series A, 108; do. pur. money fund, 113 1/2; Columbus, Chicago and Indiana Central reorganization certifi., 70; Chicago, Milwaukee and St. Paul, Southern Minn. div. 1st, 106 1/2; do. Chicago and Pacific Western div. 1st, 92 1/2; do. Southern Minn. div. 1st, 106 1/2; Central Iowa 1st, 108; Chicago, St. Paul, Minneapolis and Omaha consol., 107 1/2; Chicago, St. Louis and New Orleans 58, 104; Columbus, Hocking Valley and Toledo 1st, 80; Denver and Rio Grande, 46; do. 1st, 108 1/2; do. consol., 90 1/2; Dubuque and Sioux City, 92; Del., Lack. and West. 78, conv., 119; East Tennessee, Virginia and Georgia, 9 1/2; do. pref., 17 1/2; do. 1st, 117; do. inc., 35 1/2; do. 58, 72 1/2; Erie and Pittsburgh consol., 115; Evansville and Terre Haute 1st consol., 97 1/2; Fort Worth and Denver, 31 1/2; Gulf, Colorado and Santa Fe 1st, 111 1/2; Galveston, Harrisburg and San Antonio 1st, 104; Hudson River 2d, S. F., 107; Houston and Texas Central, Waco and

N. W. div., 1st, 112; Indiana, Bloomington and Western, 35 1/2; do. inc., 49; do. 1st, 87; do. 2d, 74; do. Eastern div. 68, 92; International and Gt. Northern 1st, 107; do. coup. 68, 83; Kansas Pacific inc., 100; do. 68, Denver div. ass., 108; do. 1st consol., 99 1/2; do. 68, 1896, 108 1/2; Louisville, New Albany and Chicago, 55; do. 1st, 102; Lake Erie and Western, 30 1/2; do. 1st, 99; Long Island, 62 1/2; Lafayette, Bloomington and Muncie 1st, 99; Louisville and Nashville, Cecelian Branch 1st, 101 1/2; do. Evansville, Henderson and Nashville 1st, 100; Lake Shore div. bonds, 123; Memphis and Charleston, 41; Manhattan Beach, 25; Michigan Southern, S. F., 106 1/2; Milwaukee, Lake Shore and Western pref., 45 1/2; do. 1st, 98 1/2; Missouri, Kansas and Texas, 31 1/2; do. gen'l mort. 68, 80 1/2; do. consol. 78, 104 1/2; do. 2d, 68; Missouri Pacific, 102 1/2; do. 3d, 111 1/2; Mobile and Ohio, 19 1/2; do. 2d debent., 49; Minneapolis and St. Louis 1st, 120; do. Iowa Ext. 1st, 114 1/2; Metropolitan Elevated 2d, 82; New York City and Northern gen'l mort. 47; Northern Pacific 1st, 104 1/2; New Orleans Pacific 1st, 88; New York, West Shore and Buffalo 1st, 75 1/2; Nashville, Chattanooga and St. Louis, 59; do. 1st, 117; New York, Chicago and St. Louis, 12 1/2; do. pref., 29; do. 1st, 97; New York, Ontario and Western, 25 1/2; Norfolk and Western pref., 43; do. gen'l mort., 101 1/2; New York, Lackawanna and Western, 88 1/2; do. 1st, 112 1/2; Ohio and Mississippi pref., 98 1/2; Ohio Central, 12 1/2; do. inc., 32; do. 1st, 89 1/2; Ohio Southern, 12 1/2; do. inc., 28 1/2; do. 1st, 82; Oregon Trans. Continental, 84 1/2; do. 1st, 93; Oregon Railway and Nav., 139; do. 1st, 107; Oregon Imp. Co., 1st, 92; Oregon Short Line 68, 95; Peoria, Decatur and Evansville, 23 1/2; Pennsylvania Co. 4 1/2, 95 1/2; Richmond and Allegheny, 11 1/2; do. 1st, 77 1/2; Richmond and Danville, 55; do. debent., 64 1/2; Richmond, Danville and West Point, 24 1/2; Rochester and Pittsburgh, 19 1/2; do. inc., 44; Rome, Watertown and Ogdensburg, 34; do. 58, ext., 73; do. inc., 43; St. Louis, Kansas City and Northern R. E. 78, 108; South Carolina 1st, 102 1/2; St. Paul and Duluth pref., 94 1/2; St. Paul, Minn. and Man., 46; do. 1st, 108 1/2; do. 2d, 109; do. Dakota Ext. 1st, 108 1/2; St. Louis, Alton and Terre Haute div. bonds, 75; St. Louis and San Francisco 2d, Class A, 98 1/2; do. B, 95; do. Equip., 103; St. Paul and Sioux City 1st, 112 1/2; St. Louis and Iron Mt., Ark. Branch 1st, 108; do. 58, 76; Scioto Valley 1st, 30; Southern Pacific of California 1st, 105; Syracuse, Binghamton and New York 1st, 126 1/2; Texas Central 1st, 105 1/2; Texas and Pacific, 40 1/2; do. inc. L. G., 65; do. consol. 68, 93; do. Rio Grande div. 1st, 81 1/2; Utah Southern Ext. 1st, 100; Toledo, Wabash and Western, gen'l mort. 68, 80 1/2; Winona and St. Peter 1st, 108; Arkansas 78, L. R., P. B. N. O., 47; do. Central R. R., 19 1/2; Georgia 78, gold, 114 1/2; Louisiana consol., 78, 69 1/2; Missouri 68, 1886, 107; do. 1887, 108; do. 68, H. & St. J. issue, 109 1/2; North Carolina consol. 48, 77 1/2; South Carolina 68, non-fund., 5 1/2; Tennessee compromise bonds, 44; American Cable, 67 1/2; Mutual Union Tel., 19; do. 68, 83 1/2; Colorado Coal and Iron, 32 1/2; do. 68, 81; Consolidation Coal, 25; Cameron Coal, 15; New Central Coal, 13; Homestake Mining, 16; Ontario, 23; Standard, 6 1/2.

**Boston.**—Atchison R. R. 4 1/2, 80; Atlantic and Pacific blocks, 101 1/2; do. 68, 91; Atchison, Topeka and Santa Fe 1st, guar., 111; Boston, Revere Beach and Lynn, 115; Burlington and Missouri River in Neb. 68, non-exempt, 104; Boston and Lowell 58, 105 1/2; Chicago, Burlington and Quincy 48, 86 1/2; do. Denver Ext., 48, 83; Chicago, Milwaukee and St. Paul, Dubuque div. 68, 103; Detroit, Lansing and Northern, 78 1/2; do. pref., 112; Eastern (N. H.) R. R., 92; Flint and Pere Marquette, 25 1/2; do. pref., 98 1/2; Iowa Falls and Sioux City, 35; do. 78, 120; Kansas City, Ft. Scott and Gulf, 78, 112; Kansas City, Lawrence and Southern 58, 104 1/2; Little Rock and Ft. Smith 78, 88; Louisiana and Missouri River, 12; Mexican Central, 20 1/2; do. 78, 72; do. inc., 21; Marquette, Houghton and Ontonagon, 56; Massachusetts Central, 3; do. 68, 21; New York and New England 68, 105 1/2; New Mexico and Southern Pacific 78, 111 1/2; Old Colony 68, 117; Oregon Short Line 68, 95; Republican Valley 68, 102; Rutland pref., 17 1/2; do. 68, 96; Sonora 78, 103; Toledo, Cincinnati and St. Louis, 3 1/2; do. 68, ass., 30; Toledo, Delphos and Burlington Branch inc., 10 1/2; Wisconsin Central, 23 1/2; do. pref., 32; do. 78, 1st series, 80 1/2; Allouez Mining Co., 2; Atlantic, 13; Franklin, 11 1/2; Huron, 1 1/2; Napa consol. quicksilver, 3 1/2; Osceola, 30; Pewabic, 7; Silver Islet, 4.

**Philadelphia.**—Allegheny Valley 78, Eastern Extension, 122; Belvidere Delaware 3d, 105; Buffalo, New York and Philadelphia pref., 29; Central Transp., 34; Germantown

Passenger, 67; Huntington and Broad Top Mt. consol. 58, 87; Nesquehoning Valley, 51 1/2; Northern Pacific pref. scrip., 84 1/2; Pennsylvania Co. 68, 108 1/2; Pennsylvania R. R. consol. 58, 106; Pittsburgh Compromise 58, 110; Philadelphia and Trenton, 190; Philadelphia, Germantown and Norristown, 106 1/2; Pennsylvania Canal 68, 86; People's Passenger, 9 1/2; Philadelphia, Wilmington and Baltimore 48, 93 1/2; Philadelphia City 68, 1896, 129; do. 1901, 133; do. 48, 1890, 105 1/2; Philadelphia and Reading consol. 58, 1st series, 82 1/2; do. 2d series, 66 1/2; do. scrip., 113 1/2; do. adj. scrip., 84; do. debent. 68, 70; do. gen'l mort. 78, 101 1/2; St. Paul and Duluth pref., 94 1/2; Texas and Pacific consol. mort. 68, 94; do. Rio Grande div. 68, 82; Thirteenth and Fifteenth Streets Railway, 75 1/2; Union and Titusville 78, 95 1/2; West Jersey 68, 115.

**Baltimore.**—Atlanta and Charlotte, 61; do. 1st, 107 1/2; Baltimore and Ohio 1st pref., 130; Baltimore City 68, 1890, 112 1/2; do. 68, 1893, exempt, 115; do. 68, 1900, 124 1/2; do. 58, 1916, 122 1/2; do. 58, 1894, 113 1/2; do. 48, 1925, 111 1/2; Canton Co. 68, gold, 109 1/2; Charlotte, Columbia and Augusta, 31 1/2; do. 2d, 102 1/2; Chesapeake and Ohio Canal, 30; Maryland 68, exempt, 110; do. Defense 68, 102 1/2; Ohio and Mississippi, Springfield div. 1st, 107 1/2; Parkersburg Branch, 8 1/2; Virginia consol. coupons, old, 51 1/2; Virginia Peckers, 35; do. coupons, 39; do. 10-40 coupons 45; do. old, 51; Virginia Midland 2d mort., 107; do. 5th mort., 95; Virginia and Tennessee 68, 101; Western Maryland, 12; Wilmington, Columbia and Augusta, 110.

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## COMMERCIAL DEPARTMENT.

## POSTAL IMPROVEMENTS.

DESPITE the general worthlessness of the recently defunct forty-seventh Congress, there were a few measures passed by that body deserving of commendation, and notably the changes in the postal laws. The most important change is the reduction, after October 1, of letter postage to two cents per half ounce which, in business houses carrying on an extensive correspondence, will result in a considerable saving of expense. The postage upon city letters will still remain as before, and thus it will cost a New York merchant no more to send a letter to San Francisco than to a person in an adjacent street. The next Congress will probably supplement the foregoing reduction by reducing the postage upon city letters to one cent per half ounce. The changes made in the money-order system are unimportant and not worthy of special note. They consist chiefly in a trifling reduction on small orders, and the increase of the limit of the amount transmittable by money order from \$50 to \$100.

The most novel and probably the most beneficial device introduced in the postal system for many years, will be the issue of three-cent postal notes, the plates for which are already in preparation. These notes are designed for the rapid and cheap transmission of any odd sums of money under \$5.00, and the uniform charge therefor is three cents. The notes resemble the ordinary banknote, and bear upon the face the name of the office by which it is issued, and also that to which it is sent. The date of issue and the value of the note is indicated by punching out the years, months and days, and the amount of dollars, dimes and cents in columns bearing the necessary signs and figures, much in the same manner as tickets sold in the cars of Eastern railways are punched by conductors. The notes are bought without formality, in the same way as postage stamps, and are made payable to the bearer at any time within three months after the last day of the month of issue, the signature of the payee being required at the office of payment. The usefulness and convenience of this postal note is readily apparent, especially to those who are in the habit of sending odd sums of money to persons at a distance. It is presumed that in transmitting larger sums, a check drawn payable to the bearer is the readiest means of forwarding money, but two or more postal notes could be purchased and transmitted, where the required sum did not exceed ten or twenty dollars. The notes will be ready for use as soon as issued.

On the whole, the changes in the postal laws have been improvements, but there are many points in which our mail facilities could be increased. The establishment of Postal Telegraphs and Savings Banks such as those introduced in England would be excellent features of our postal system, but their elaboration is a matter requiring much thought and time, and we may hardly expect their introduction in this country for some years to come. It would be easy, however, to introduce one improvement, in arranging for the delivery of unstamped letters, without sending them to the Dead Letter Office as is done at present. There are many cases in which important letters are inadvertently mailed without a proper stamp affixed, and the postal authorities would be saved much trouble and labor were they allowed to forward the letters to their proper destination, there collecting postage at an increased rate. Another feature in which improvement might be made with advantage, is the letter boxes used by the Post Office Department in city streets. At present there is no provision made in these boxes for the posting of newspapers and packages, and the sender is obliged to leave them on the top of the box, exposed to wind, rain and snow, and at the mercy of the passers-by and street gamins. There could be, we imagine, little difficulty in the way of providing larger boxes, and widening their orifices sufficiently to permit the posting of other mail matter beside letters and postal cards. These latter improvements are mere matters of detail, and could be introduced by the Post Office authorities without the intervention of legislation.

Taking everything into consideration our postal facilities are now excellent, and it is gratifying to know that the receipts of the Post Office warrant the reduction of thirty-three and a third per cent in the present postage rates. After the first of October the rates for the transmission of letters by mail will allow them to be sent over two thousand miles at a charge of somewhat less than one hundredth of a mill per mile, which is as low a rate as we can ever in reason demand, and considerably lower than that of any other country.

## New York Markets.

Quotations of Wednesday, March 14.

FLOUR dull and weak; No. 2, \$2.80@3.60; shipping extras, \$4@4.30; superfine, \$3.70@4. Corn meal dull.

COTTON—Spots firm; sales 965 bales; middling uplands, 10 3-16c; do. Gulfs, 10 7-16c. Futures dull, closing at 10.18c. for March, 10.29c. for April, 10.42c. for May, 10.56c. for June, 10.68c. for July, 10.79c. for August, 10.51c. for September, 10.22c. for October, 10.12c. for November, and 10.13c. for December; sales 47,000 bales; receipts at the ports, 24,434 bales.

PROVISIONS—Pork was more active here, and 10@12c. per lb. higher in Chicago. The Western advices note a large speculative interest and a free covering on the part of the "short" interest; sales on the spot 425 bbls. mess, \$19.40@19.50; for future delivery 500 bbls. May, \$19.10; closing \$19.20 bid for May. Bacon, beef, and beef hams quiet and unchanged. Cut meats firm; sales, 5,000 lbs. pickled bellies, 10 lbs, 10 1/2c.; 500 pickled shoulders, 8 1/2@8 3/4c.; 1,000 do. hams, 11 1/2@12c. Lard was stronger, in sympathy with the Western advices; sales on the spot 110 tcs. prime city, 11.25@11.30c.; 1,000 tcs. do. Western, 11.65@11.67 1/2c.; refined to the Continent, 11.60c.; South America, 11.85c.; in future delivery contracts a large speculation took place; sales 40,000 tcs., mostly for May, including March, 11.62c.@11.63c.; April, 11.63@11.65c.; May, 11.67@11.71c.; June, 11.70@11.75c.; July, 11.76c.; August, 11.81c.; closing March, 11.63c.; April, 11.65c.; May, 11.69c.; June, 11.74c.; July, 11.78c.; August, 11.80c.; September, 11.84c. Dressed hogs, firm; city, heavy to light, 9 1/2@9 3/4c.; pigs, 10c. Butter is dull and easy; new State creamery, first and extra, 25@38c.; do. dairy, half firkins, tubs and pails, 18@32c.; Welsh tubs, 18@30c.; Western factory, 11@20c.; do. creamery, 14@25c.; old State dairy, tubs, 11@23c.; do. firkins, &c., 11@22c.; Western dairy, 10@18c.; rolls, 10@20c. Cheese is firmer and more active; State factory, 9@14 1/2c.; Ohio do., 8@13 1/2c.; creamery, 5 1/2@8 1/2c. Eggs in good receipt, and easy; State and Pennsylvania, 20 1/2@21c.; Western, 20@20 1/2c.; Southern, 19 1/2@20 1/2c.; poor do. 18@19c.; duck, 33@35c.

GRAIN—Wheat lower; options active, especially for May; export trade fairly active; prices firmer toward the close; spot sales 160,000 bush. at 95c@1.24 for red, including No. 2 delivered at \$1.21@1.21 1/2; steamer No. 2 at \$1.18, and No. 3 at \$1.16 1/2@1.18 1/2; 93c. @1.26 1/2 for white, including No. 1 in small lots at \$1.12 1/2; of options, sales 5,864,000 bush. No. 2 red at \$1.18 1/2@1.19 1/2 for March, \$1.19 1/2@1.20 1/2 for April, \$1.21 1/2@1.22 1/2 for May, and \$1.22 1/2@1.23 1/2 for June. Barley quiet; 4,000 bush. 2-rowed State sold at 87c. Rye quiet. Oats lower; sales 960,000 bush. at 50 1/2@52c. for mixed, and 53@58c. for white, of which No. 2 at 51 1/2c. for mixed, and 54 1/2c. for white; also No. 2 mixed at 51c. for March, 51 1/2@51 3/4c. for April, 52@52 1/2c. for May, and 52 1/2@52 1/2c. for June. Corn lower; the trading on options here, as in Chicago, is mainly for May delivery; spot sales 144,000 bush. at 70 1/2@71 1/2c. for new No. 2 mixed, 61@61 1/2c. for No. 3 do., 68 1/2@69 1/2c. for steamer mixed, and 61@71c. for ungraded do.; 68c. for steamer white and Southern yellow, the latter on pier; of options, sales 2,504,000 bush. No. 2 mixed at 70@70 1/2c. for March, 70 1/2@70 1/2c. for April, 70 3/4@71 1/2c. for May, 70 1/2@70 1/2c. for June, and a load of steamer for March at 68c. After 'Change, wheat closed firm; No. 2 red winter, cash, \$1.21 1/2 delivered; March, \$1.19; April, \$1.20 3/4; May, \$1.22 1/2; June, \$1.23. Corn firm; No. 2 mixed, cash, 71 1/2c. delivered; March, 70 3/4c.; April 70 3/4c.; May, 71c.; June, 70 3/4c. Oats firm; March, 51c.; April, 51 1/2c.; May, 52 1/2c.; June, 52 1/2c.

GROCERIES—Rio coffee on the spot was dull and unchanged at 9 1/2c. for fair cargoes; options lower, but closed steady; sales 15,250 bags No. 7 at 7.20@7.25c. for March, 7.40@7.45c. for April, 7.60c. for May, 7.75@7.90c. for June; mild quiet but steady. Tea lower for Japan and green and firm for blacks. Rice in good demand and steady. Molasses was firm, and fancy New Orleans was wanted, but other kinds very quiet. Raw sugar was quiet but firm at 7 1/2@7 3/4c. for fair to good refining; sales 700 hhds. at 7c. for French Island and 7 3/4c. for centrifugal; refined lower; hards, 8 1/2@9 1/2c.; standard "A," 8 3/4@8 7-16c.

SUNDRIES—Rosins were steady, particularly the low grades; common to good strained, \$1.65 @ \$1.70. Spirits turpentine lower and dull at 50c. in yard; jobbing lots, 51c. Refined petroleum steady at 8 3/4c. for 110 test, and 8 1/2c. for 70 test; home trade lots, 9 1/2c. Crude certificates

irregular at 99@98½@99½@99½c.; closing 98½@98½c.; sales 11,320,000 bbls. Tallow quiet; 40,000 lbs. prime sold at 8@8½c. Stearine steady; prime, 11½@11½c.; oleomargarine, 9½@10c. Hops were steady and quiet at 80@90c. for New York State 1882; yearlings sold to-day at 75c. Linseed oil steady at 55@56c. Lard oil, 91c.; 225 bbls. South Sea whale sold at New Bedford for home use p. t.; crude sperm, \$1.05; refined cotton seed easy at 50@52½c.; crude, 50@52c. Foreign fruits sold by auction—18,350 boxes Messina, Palermo, and Catania oranges, \$1.50@2.50; 6,900 do. do. lemons, \$2.25@3.10, by steamer. Ocean freights easy and irregular; grain to Liverpool by steam, 4d.; flour, 15s.; bacon, 20s.; cheese, 25s.; cotton, 5.32@11.64d.; grain to Glasgow by steam, 4½d.; do. to Hamburg by steam, 70 pfennigs; do. to Antwerp by steam, 4½d.; refined oil to Hamburg or Bremen, 3s. 1½d.; crude do. to Havre, 3s. 4½d.; cases to Java, 35@36c.

## Chicago Grain Markets.

Quotations of Wednesday, March 14,

	9:30 A.M.—Opening.—		1 P.M.—Closing.—	
	Mar.	May.	Mar.	May.
Wheat...	1.10	....	1.05½	1.11
Corn....	60½	....	56½	61½
Oats....	43	....	40½	43½
Pork....	18.40	....	18.57½	....
Lard....	11.47½	....	11.55	....
S. Ribs..	9.92½	....	10.10	....

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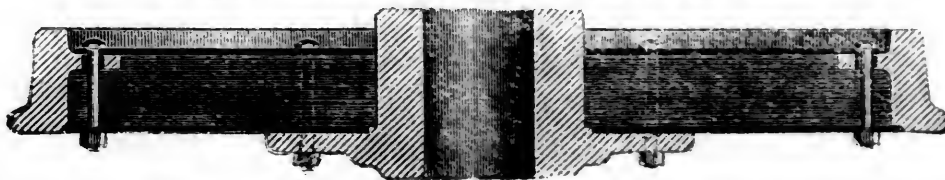
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## MISCELLANEOUS.

## ELECTRIC STORAGE.

[From the Newark, (N. J.), Daily Advertiser.]

A COMPANY has been formed in this city which is expected to occupy a prominent position in the process of storing electricity for lighting and other purposes. Its patents are now before the Commissioner of Patents at Washington, and if all the claims of the Newark organization are granted the celebrated Frenchman, Faure, and the hardly less famous Brush will lose some of their titles to consideration as discoverers.

The Newark company claims priority in the invention of the true system of storing electricity, of which M. Faure has been said to be the prophet and inventor. The electrician of the company, whose inventions the corporation holds and proposes to operate, is Nathaniel S. Keith, of New York. The company is named "The American Electric Storage Company," organized in August, 1882, and incorporated under the laws of the State of New Jersey, and its Directors are George W. Hubbell, Henry Young, George G. Frelinghuysen, Barker Gummere, Jr., and F. T. Fearey. Mr. Keith claims that two years before Faure secured his French patents he (Keith) had discovered the principles of the storage of electricity, and that to him belong the right of the invention. The patent asked for is not on the principle of electric storage, however, but on the process of constructing the reservoirs. As is known, the great thing desired in electric lighting since its practicability has been demonstrated, has been some system by which the lights were not dependent on every stroke of an engine for continuity. The storage of power, as every master mechanic knows, has been one of the great problems in mechanics, and its necessity was seen at once in electric lighting. If the lamps were only to burn when the engines were working, it was seen that the time would come when the engine might give out and leave every customer without a light, and it was also evident that the engines could not be kept working night and day to supply the demand which exists at all hours. Storage was a necessity.

The Faure, Brush and Keith inventions step in at this point. They provide a box reservoir composed of a series of lead plates into which the electric current is turned. The electricity produces a chemical action on the plates which forms a "potentiality of electric force," which will discharge the electricity in almost the same volume as received. The Keith invention differs from the Faure and Brush principally by the use of pure lead plates in the reservoir, instead of red lead. The pure lead yields much more rapidly to the action of the electric current and the reservoir may be prepared for use in far less time. The reservoir will discharge ninety per cent. of the electricity it receives, and the inventor claims that the proportion may be made even larger.

The system is now in working order at the company's office, No. 792 Broad street. The storage reservoir is a box eight inches square, in one corner of the room. The number of boxes needed depends upon the number of

lights that may be required. It is filled with a series of lead plates, and altogether weighs about forty pounds or less. Into this box is conducted a wire from the electric generator in Mechanic street, which supplies the reservoir. The Mechanic street engine runs eight hours a day, and this supplies the reservoir with electricity sufficient to supply incandescent lights for seven hours, provided a sufficient number of lamps are in circuit to use up in one hour as much electricity as the generator supplies in the same time. From the box extend wires connecting with beautifully mounted incandescent lamps of both the Weston and Edison make. The light is perfectly steady, and in color is between the yellow gaslight and the perfectly white light of the sun, having a pleasant effect on the eyes. Various forms of lamps may be used, and the reservoir will supply any number, thus attaining more perfectly than at any time heretofore the great desideratum of a wide distribution.

After the reservoir is once prepared for its work (which takes forty hours with the Keith and 800 hours with the Faure) it needs nothing but the electric current, and thenceforth works as simply as a reservoir of water. It may be filled at any time and to the full extent of its capacity, or it may be supplied with only enough electricity to keep the lamps running for a single evening. In factories furnishing their own supply of electricity to the reservoirs, the latter would be filled at odd moments when the power was not used for other purposes. The reservoirs are portable and when supplied with electricity to any quantity desired may be detached from the supply wire and used anywhere. The stored electricity may be used not only for lighting, but for running sewing machines, turning fans, pumping water, etc. The current is governed by a key similar to that used for turning gas on or off.

The results obtained are commercially valuable; the storage does not involve any great loss in the charging and the stored energy can be retained with but little loss, and the cost of the reservoir boxes are moderate and of convenient size and enduring.

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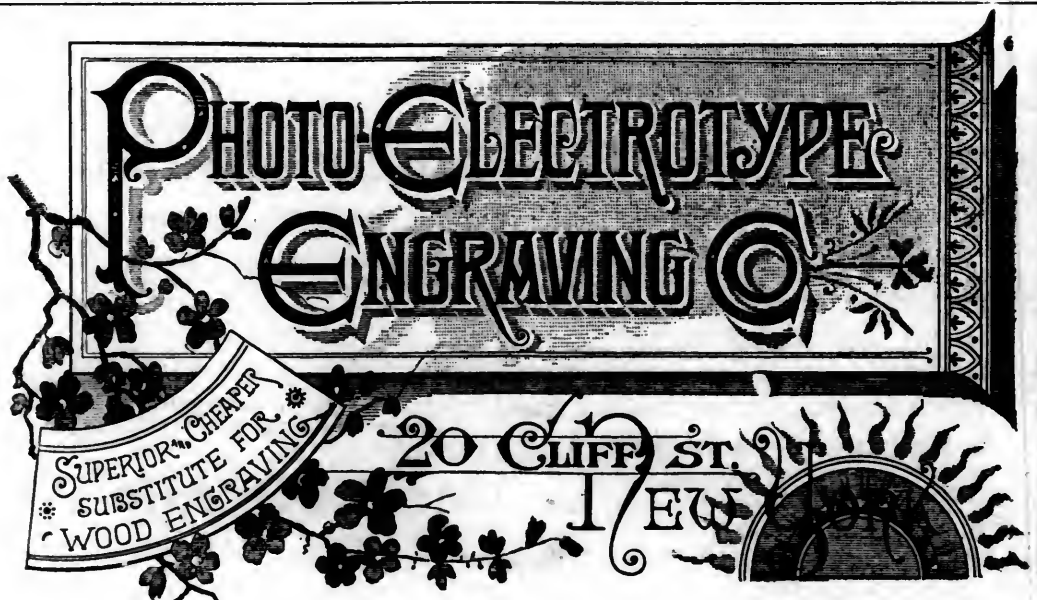
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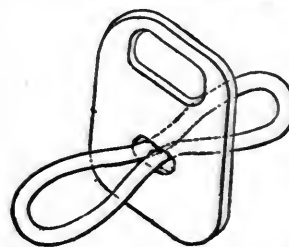
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This is a Suspension Joint, cheap, easily applied, allows for contraction and expansion, prevents the Rail from creeping, battering or brooming at the ends, giving the rail the same strength and elasticity at the Joint as at any other part of the Rail.

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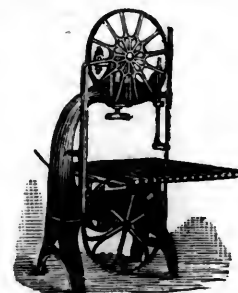


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## TRAMWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editor. All communications should be accompanied by the name and address of the writer. The English nomenclature of "Tramway" is adopted in this department as being of greater convenience and more specific in its meaning than "street railway," though in allusion to individual organizations we shall preserve their corporate titles. It is our hope to nationalize the term Tramway which is now generally used in every English speaking territory with the exception of the United States.]

### WHAT IS A "STREET RAILWAY?"

NEW YORK, March 12, 1883.

EDITOR AMERICAN RAILROAD JOURNAL.

DEAR SIR:—I see there is a department in your paper devoted to street railways, and I therefore apply to you for information. Will you kindly tell me the proper signification of "street railway." I am aware the question seems absurd, on the face of it, but really it is difficult to ascertain the real meaning. It certainly does not simply mean a railway running through the streets, for that would include the elevated roads, which I should think, would not come under the head of street railways as we understand it. An early answer to the above question will greatly oblige, yours truly,

F. C. B.

We are in no way surprised at our correspondent's lack of understanding as to the proper signification of "street railway," or rather its improper signification, for its literal meaning can only be that implied in the words, themselves a railway running through streets. He may, however, comfort himself with the assurance that the same ignorance is shared by ninety-nine in every hundred of his fellow men, and had he read the leading article in our Tramway Department of last week's issue, the causes of this universal misconception would have been apparent to him. The article in question was entitled "Tramway vs. Street Railway *et als*," and in it we submitted our reasons for changing the title of this department from Street Railway to Tramway Department.

The street railway as it is called in America is, in brief, a railway running through city streets generally operated by horse traction, and with rails lying upon the surface of the ground. So far so good, that much is generally understood by everyone. But wherein is the distinction between the elevated roads and the surface roads, save in the differences of elevation and traction? Both are street railways, yet the latter is only intended to be included in the category. It was this uncertainty of meaning, as we said last week, that induced us to introduce the general title, tramway, as the most convenient name for the ordinary street railway, and in giving our correspondent the signification of tramway as we understand it, he may consider his question answered.

A tramway is a passenger road running

through streets and highways, its cars variously operated by steam, horse power, cable traction, or any other means of locomotion, the special object of such road being to receive or deposit passengers at any point that may best suit their convenience. It is the latter clause which contains the chief distinction between tramways and other passenger roads. The elevated roads pass through the streets it is true, and for this reason are street railways. But they stop only at regular stations at fixed intervals, and according to our definition are not tramways. The use of the word tramway in place of street railway, horse railroad, or any other term hitherto applied to convey the above signification, disposes of the ambiguity and narrows the definition to the precise meaning desired. Americans claim that horse cars for passengers in city streets were first introduced in this country, and therefore the prior use of the term street railway entitles it to general and accepted use. But this is entirely foreign to the purposes of our argument. We do not advocate the adoption of the word tramway on the ground of its priority, nor upon the fact that it is the common designation in England. We concede the right of Americans to call their roads by any name they please, but we credit them with more common sense than will be displayed, if they persist in using the term street railway, simply because the English tramway was not introduced until a subsequent period. No one can deny the greater brevity and convenience of the word tramway, and the narrower and more exact signification it conveys than American terms of the same import, and for this reason alone, we urge its general adoption to the exclusion of the vague and general terms now commonly employed. With her natural utilitarianism we cannot believe America will be the only English speaking nation in the world to use an antiquated, inexpressive term, when another in every way more suitable is at hand.

Our correspondent's question might have been answered more briefly and without dwelling upon the comparative merits of the terms tramway and street railway, but deeming his doubts regarding the precise signification of street railway as common to a great number of persons, we have taken his communication as a text upon which to deliver a dissertation. We trust he will now understand the common acceptance of the term street railway, and will, in company with other readers of the AMERICAN RAILROAD JOURNAL, admit the superiority of the word tramway. In using this latter term there can be no question as to the meaning intended, and there would be no call for answers to such queries as the above. Tramways can

only convey one signification, and that the one intended. A street railway may be a tramway, but it may also be an elevated or an underground road. Tramways are street railways, but street railways are not necessarily tramways. The one is the name of a genus, the other of a species, though we have rather chosen to regard tramways as a genus by themselves.

We presume our adoption of the title Tramway Department, and the general use of the word tramway in our columns will not meet with universal satisfaction. The terms street railway, horse railroad, and others of the same purport have been in common use for years, and it will be no easy matter to introduce an entirely different appellation, but in the end it is our belief that the sober practical wisdom of Americans will lead to the general introduction of tramway as the accepted designation of street railway in its ordinary sense. Time alone can decide whether we are correct or not in this prediction, but at least one precedent can be cited to prove that English terms have been adopted by Americans where their superiority is apparent. It is but a few years ago that the English word *railway* superseded the American term *railroad*. The former was admitted to be the most convenient and expressive designation, and though for some years it was viewed with disfavor by many, the people of this country finally accepted the term railway as the most desirable. Judging by this fact, there is every reason to believe that the time is not far distant when tramway will be the universal term employed throughout all English speaking territories, to designate a passenger road running through the streets of and Cities, whose cars are generally drawn by horses, stopping at any point along the line that passengers may desire.

### AN INVITATION ACCEPTED.

WE have lately received the following communication from the John Stephenson Company, one of the largest organizations in the world engaged in the building of tram-cars and stages:

AMERICAN RAILROAD JOURNAL, 284 Pearl St.:

In your issue of January 6th, 1883, under the head of "A New Departure," after referring to the organization of the "Street Railway Association," and the lack of improvements in street cars you announce that the "proprietors of the AMERICAN RAILROAD JOURNAL have determined upon giving prominence in its columns to information on the Horse Car System of this country, Canada and elsewhere."

Tramways have attained such magnitude, and involve so much of capital and comfort, that the wonder is you have not thought of doing so before—but this may be one of the first fruits of the new association referred to.

As matter for your columns in the line proposed we have pleasure in inviting to an examination of cars now being prepared for the Sixth Avenue Railroad (we would

say "Tramway"). These cars are also "A New parture" as compared with those referred to in your article of January 6. The cars may be seen at our works, 47 East 27th street (city).

Respectfully,

JOHN STEPHENSON, Pres.

The kind invitation contained in Mr. Stephenson's letter we gladly accept, and if he will permit us shall not confine our visit to the inspection of the cars specified, but would take great pleasure in examining the works of the company with a view to publishing a descriptive article on the manufacture of tram-cars. Such a description would, we think, be of great interest to tramway officials and managers in cities and towns remote from car building centers, as well as to the traveling public who daily patronize those highly useful institutions, the city tramways.

#### Tram-Car Heating.

THE system of Tram-Car heating recently introduced by the New York Car Heating Company, and lately described in this department of the JOURNAL, has attracted considerable attention. The New York Times gives at length the results of a trial trip on the Third Avenue Road where the operations of the system were carefully noted. It is claimed by the inventor and the stockholders of the company to supersede all other systems in diffusing throughout the entire car an agreeable and uniform heat. Running through the length of the tube, which is about 18 inches in circumference, are two iron pipes for supplying and exhausting the steam used in heating the material that is to diffuse the warmth. This material, which is packed into the space between the steam-pipes and covering of the tube, is a compound of caustic soda and acetic acid, and melts at a temperature of 130 degs. Fahrenheit. Steam is generated in the boiler in the station and forced into the pipes in the tube by a flexible steam-pipe. The time required for heating the compound in the morning, when the temperature is at the freezing point, is said to be from ten to fifteen minutes, and at other times during the day from three to four minutes. It is claimed that any degree of temperature required can be secured, and that the compound will radiate it slowly for a long time. The inventor claims that the chemical properties of the compound are such that after cooling down to a certain degree it will generate a larger quantity of caloric, so that the temperature in a car will on its return to the station be a degree or two higher than when it started.

On the occasion of the recent experimental trip, Gen. Shaler, the President of the company; Mr. Walsh, the inventor, and several invited guests, boarded a Third Avenue car at the City Hall, to give the virtues claimed for this system a trial. A small thermometer was hung up inside and another outside of the car. Mr. Walsh was asked why the company had waited until the Spring season, when it was almost time to discontinue warming cars, before bringing the system to the attention of the public, and he replied that he had been for a long time per-

fecting the invention and had not until now satisfied himself of its entire success. A sharp breeze was blowing, and the thermometer outside the car marked 27 degs., while inside the mercury stood at 58 degs. When the car came out of the tunnel at Canal Street, the temperature rose slowly, so that when the Cooper Institute was reached the mercury inside had risen to 65 degs., while outside it was 30 degs. At the depot at Sixty-fifth Street it was 60 degs., and when the car was driven into the stables in Harlem the thermometer marked 58 degs.

#### TRAMWAY NOTES.

IN changing the title of this Department of the AMERICAN RAILROAD JOURNAL from Street Railway to Tramway which was done in our last issue, and in adopting the generic name of tramway, in our editorial and news columns, a slight typographical confusion ensued, which will not happen again. The corporate title of organizations will be preserved and in speaking of them individually we shall refer to them as the ——— Street Railway or Horse Railroad as the case may be. It is in their general and collective sense that we shall invariably apply the term tramway. In this connection it may be well to explain the proper typographic application of the prefix "tram." Tramway is a single word and should not be written as two, nor compounded as in "tram-way." Tram-car, however, is a compound word and should so be written.

LAST week we published in our News Department the names of the officers, commissioners and members of the executive committee of the approaching National Railway Exposition, at Chicago, in May next, together with the Premium List for Department A, devoted to "Rolling-Stock." This week we continue the publication of the premium list giving the awards for appliances in Department B, C, D and E, respectively devoted to machinery, track goods, metals, to station and office appurtenances, and pumps and water station appliances. Next week we shall publish the remainder of the list. An inspection of the awards for appliances in the various departments will show that the interests of tramways are not considered in the Street Railway Department alone.

FIFTY-THREE employes, conductors and drivers, of the People's Street Railway Company, of Philadelphia, have been discharged for stealing fares. The boldest of them, it is said, were dishonestly keeping from \$2 to \$5 a day. The superintendent of the road is reported as saying that the thieves were not prosecuted because conductors are almost sure to escape punishment after a jury has been treated to a contrast between their hard work and light wages and the pleasant condition and abundant cash of the president of the company.

THE Senate Committee on Passenger Railways in the Pennsylvania legislature are considering a bill recently introduced authorizing the increase of capital stock by tramway corporations on condition that they will not

charge more than five cents fare for carrying passengers over their lines. The 3d section provides that any corporation accepting the provisions of this act shall not charge or receive more than five cents fare for carrying or transporting passengers.

At a recent meeting of the trustees of the Brooklyn Bridge it was decided to charge the companies running tram-cars thereon, five cents for every passenger carried. This strikes us as rather exorbitant, and we do not see where the companies will realize their profits. The bridge will be free to foot passengers, and a tariff has been established for horses, carriages, drays, and cattle. It is officially announced that the bridge will be opened for travel within sixty days.

THE attention of those interested in the management of tramways is called to the article published in the Miscellaneous Department of this week's issue on "Electric Storage" there is but little doubt that ultimately electricity will be the motive power commonly employed on tram-cars.

THE Consolidated Street Railroad of Columbus, O., will soon commence putting down new tracks on High street, between Broad and Long. The cost of this improvement will be about \$5,000, and will add materially to the convenience of the public.

TRAMWAY officials are requested to forward us the annual statements of the organizations with which they are connected. It is our desire to furnish accurate and complete information regarding every tramway company in the country.

A TRIAL of the Tripp electrical tram-car was made in London last week. The car ran a distance of four miles satisfactorily and fulfilled the conditions of the Board of Trade.

IN our department of New Inventions this week will be found the description of a sand-box for tram-cars.

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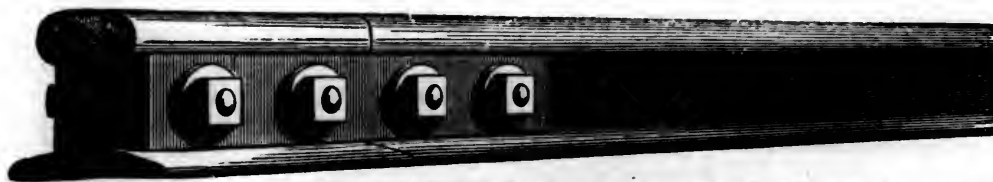
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## NEW INVENTIONS.

## TO INVENTORS AND PATENTEES.

THIS department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Tramways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full descriptions of those most useful and important are published *free of charge*.

Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

## A WORD OR TWO OF EXPLANATION.

[We reprint the following from our issue of Feb. 24, and shall keep it standing at the head of this column until the purposes of the Department of New Inventions are fully understood by all our readers].

THE department of New Inventions is conducted in the interests of our readers and of inventors of devices applicable to Railroads, Steam Navigation, Mining, Street Railways, etc. We believe that full descriptions of new and patented appliances of this nature will prove interesting to our readers, and cannot fail to bring the inventor's device into the prominent notice of that class of persons among whom he looks for the heaviest sales and royalties. No charge is made for the insertion of such description in this department, but there is a *sine qua non* requisite in all inventions before we will devote space toward their publication. They must be *new* and *valuable*. It is not our intention to offer a free advertisement to any person, and the inventor whose invention is given full description in the AMERICAN RAILROAD JOURNAL must have produced something of importance and value.

We have not established this department in a spirit of philanthropy, and do not lay claim to any special generosity in publishing descriptions of new inventions free of charge. Our aim is to increase the number of both our readers and advertisers. The continued publication of valuable patents will, we think, attract readers who are interested in the problems connected with railroad and steamboat management, mining, the management of street railways, and the like, while the value of an advertisement in the columns of the JOURNAL will ultimately be apparent to inventors of appliances tending to solve these problems. It is purely a business transaction, and we do not wish inventors to feel themselves under any

obligation to us through our description of their patents. If they choose to advertise or order a number of copies of the AMERICAN RAILROAD JOURNAL containing such descriptions, we would be glad to have them do so, and may possibly ask them for an advertisement or an order, in the form of a fair business proposition, but they are under no obligation to accept our advances. In other words, there is *nothing* obligatory on their part, but at the same time there is nothing obligatory on our part either. We reserve the liberty to ignore any invention whose description is sent us without assigning any reason for such action, and if our opinion and that of the inventor as to the utility of the invention chance to differ, we propose to be guided solely by the former.

The cause of these few words of explanation lies in the fact that many inventors seem to recognize an obligation on our part to describe in full their inventions, while they in return do not feel compelled to go to any expense in order to acknowledge such publication. It would be manifestly impossible for us to publish full descriptions of all inventions of this class, when the weekly list of new patents of the sort numbers fifty or more. Every new invention of the character mentioned above is noticed in our weekly list of patents, and we shall further endeavor to give a brief description of all, but in selecting those for extended notice, we are guided simply by their importance and general utility. Our advertising pages are open at reasonable terms to all inventors and holders of patents, but this department is entirely our own, and we must be pardoned if we choose to conduct it in the manner we deem best. If inventors desire a medium through which valuable inventions of a certain class are brought into public notice free of charge, they will aid us in this direction by subscribing to and advertising in the RAILROAD JOURNAL, but they should do so solely in a practical business way, not influenced by any feelings of obligation, while none exists upon their part so to do, nor upon our part to publish any description that is forwarded us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Tramways, Machinery, Etc.

BEARING DATE OF MARCH 6, 1883.

- 273,250. Automatic Governor and Cut-off: Herbert H. Buffam, San Francisco, Cal.  
 273,269. Gas-Engine: Edwd. J. Frost, Philadelphia, Pa.  
 273,271. Straight-Way Valve: Michael J. Gibbons, Dayton, Ohio.  
 273,284. Steam-Valve: Alfred B. Jenkins, New York, N.Y.  
 273,290. Car-Door: Christopher C. Kilts, Hannibal, Mo.  
 273,299. Steam-Boiler and other Furnaces: Orel D. Orvis, New York, N.Y.

- 273,302. Machine for making Bands for Railroad-Springs: Joseph Palmer, Concord, N. H.  
 273,307. Safety Attachment to Car-Trucks: John Rad-din, Lynn, Mass.  
 273,312. Lubricator: Samuel Reid, Chicago, Ill.  
 273,314. Lubricator: Joseph Vin Renchard, Windsor, Ontario, Canada.  
 273,326. Car-Coupling: John H. Ward, Lowell, Mass., assignor of one-half to James H. McDermott, same place.  
 273,339. Car-Coupling: Bernard Bird, Buffalo, N. Y.  
 273,343. Car-Coupling: Clinton Browning, Shousetown, assignor, by mesne assignments, to James H. Lindsay, Trustee, Allegheny City, Pa.  
 273,344. Automatic Car-Brake: Edward M. Buckley and Andrew Jackson, San Francisco, Cal.  
 273,353. Machine for Straightening or Bending Rails: Peter Frichette, Sheridan, Cal.  
 273,357. Car-Coupling: Simon J. Harry, Negaunee, Mich.  
 273,358. Car-Bell: Daniel R. Hart and John B. Geach, New York, N. Y.  
 273,367. Apparatus for Returning and Feeding Water to Boilers: Timothy J. Kieley, New York, N. Y.  
 273,376. Steam and Air Engine: Frederick McMellon, Boston, assignor of one-third to Robert G. Parker, Mansfield, Mass.  
 273,377. Electric Railway Signal: Charles J. Means, Boston, Mass.  
 273,381. Mail-Bag Catcher: John L. Oliver, Cincinnati, Ohio, assignor of one-half to Philip Moessinger, same place.  
 273,387. Steam-Boiler: Geo. A. Porter, Syracuse, N. Y.  
 273,389. Pressure Regulator or Governor: George B. Price, Philadelphia, Pa.  
 273,415. Railway-Car: Nathaniel Wheeler, Bridgeport, Conn.  
 273,417. Manufacturing Car-Coupling Pins: Jos. While, Cleveland, Ohio.  
 273,421. Steam-Boiler Furnace: John Abell, Woodbridge, Ontario, Canada.  
 273,423. Speed-Indicator: Thaddeus Ackley, Warren, Ohio.  
 273,428. Locomotive Head-Light: James Allen and William R. Musser, Lynchburg, Va.  
 273,438. Car-Coupling: Wanton C. Barber, Villisco, Ia., assignor to himself and John S. Green, same place.  
 273,441. Railway-Torpedo: James H. Bevington, Cleveland, Ohio.  
 273,446. Rotary Engine: John H. Blake, Batavia, N. Y.  
 273,450. Switch-Stand: James Brahn, Jersey City, N. J.  
 273,464. Car-Coupling: A. Wells Case, South Manchester, Conn.  
 273,465. Means for Stopping Railway-Trains: John Chandler, Brooklyn, N. Y.  
 273,473. Car-Axle Box: Nathan H. Davis, Philadelphia, Pa., assignor of two-thirds to A. B. Davis and Louis C. Gratz, both of same place.  
 273,475. Car-Coupling: Wm. H. Diehl, Hyde Park, Pa.  
 273,481. Car-Coupling: George P. Dougherty, Independence, Mo.  
 273,484. Car-Axle Box: Stephen R. Dyer, New Orleans, La.  
 273,489. Turn-Table for Electric Railways: Thomas A. Edison, Menlo Park, N. J.  
 273,506. Car-Axle: Jeuleos Gambille and John F. Haring, Cresskill, assignors to themselves, and John H. Huyler, Tenafly, N. J.  
 273,513. Railway-Signal: William Hadden, Brooklyn, assignor to the American Railway Signal Company, New York, N. Y.  
 273,557. Engine for Converting Motion: Frederic W. Link, Mount Pleasant, Ohio, assignor of one-half to Nathan Holloway, Chicago, Ill.  
 273,558. Railway Signal Apparatus: Jos. P. Livermore, Boston, Mass.  
 273,565. Electric Car-Brake: David J. Macpherson, Sioux Falls, Dak.  
 273,566. Car-Brake: John F. Mallinckrodt, Zaleski, Ohio, assignor to the Mallinckrodt Brake Company, East St. Louis, Ill.  
 273,570. Stock-Car: Watts Martin, Pennsborough, assignor of one-half to Thomas E. Davis, Harrisville, W. Va.  
 273,574. Car-Coupling: Charles W. McMillen, New Castle, Pa.  
 273,595. Dust-Guard for Railway-Cars: William H. Pettiner and Joseph L. Colcord, Augusta, Me.



- 273,597. Valve-Gear for Steam-Engines: George T. Pillings, Baltimore, Md.
- 273,607. Straight-Way Valve: Joseph Richter, Cincinnati, Ohio.
- 273,609. Reversing-Gear for Steam-Engines: Frederick Rock, Homer, N. Y., assignor of one-half to William F. Hitchcock, same place.
- 273,620. Sleeping-Car: John A. Sleichner, Troy, N. Y.
- 273,624. Crank-Movement in Steam-Engines and Other Machinery: Jesse M. Smith, Detroit, Mich.
- 273,631. Railroad Ditching and Excavating Machine: Hosea T. Stock, Toledo, Ohio.
- 273,639. Railway Signal Apparatus: Charles D. Tisdale, Boston, Mass., assignor, by mesne assignments, to the American Railway Signal Company, New York, N. Y.
- 273,640. Steam-Boiler: John C. Titus, Marion, Ohio.
- 273,645. Valve and Valve-Gear for Steam-Pumps: J. R. Vellacott, Des Moines, Iowa, assignor of one-half to George Lendrum, same place.
- 272,652. Injector: Orson H. Wheeler, Charlesworth, Mich.
- 273,655. Steam-Actuated Valve: Lorns Wienman, Columbus, Ohio.
- 273,658. Method of Casting Car-Wheels: William Wilmington, Toledo, Ohio.
- 273,664. Car-Coupling: Clinton Browning, Shousetown, assignor, by direct and mesne assignments, to James H. Lindsay, Trustee, Allegheny City, Pa.
- 273,665. Car-Buffer: Clinton Browning, Shousetown, assignor, by direct and mesne assignments, to James H. Lindsay, Trustee, Allegheny City, Pa.
- 273,681. Interlocking Apparatus for Railway Switches and Signals: John W. Harper, Jersey City, N. J., assignor of one-half to James B. Graham, same place.
- 273,689. Covering for Steam-Boilers, etc.: George Kelly, Chicago, Ill., assignor to the Kelly Scroll Section Manufacturing Company, same place.
- 273,693. Side Bearing for Railway-Cars: Sidney D. King, Pittston, Pa., assignor of five-eighths to George B. Thompson, same place, and Clarence D. Simpson, Scranton, Pa.

### Safety Car-Wheel.

ROBERT MC D. SMITH, OF ANNADA, MO., PATENTEE,  
ASSIGNOR OF ONE-HALF TO HENRY S. CARROLL,  
OF CLARKSVILLE, MO.

THIS car-wheel resembles the ordinary wheel with the addition of a bead or secondary tread acting the part of a protection flange. The bead is immediately adjacent to the tread surface of the wheel forming a flange of about half the height of the wheel flange. By this means additional protection is assured to prevent the wheel from jumping the track, while the use of sharp flanges which rapidly wear out is avoided. In running, the wheel maintains its ordinary position, except where it comes in contact with a lip on the rail, or a split in the same, or a misplaced joint exposing over one-half of the end of the next rail thereby forming a lip that would cause the flange on the old wheel to jump the track, when the secondary tread or bead would follow the rail, being held in position by the outer flange, thereby giving the wheel an increased diameter and thus removing all the friction of the flange from the crown or ball of the rail and causing the wheel that is on the bead to travel in a single revolution three inches ahead of the wheel on the opposite rail, by which gain it is induced to run to the center until it assumes its natural position on the rail. The wheel is thirty-three inches in diameter, counting from the main tread. It is claimed by the inventor that the Safety Car-Wheel is safer, cheaper and better than any wheel heretofore used, and will last one-third longer than the ordinary wheel used on railway cars and engines.

### Car-Coupling.

EDWIN S. GRAVER, OF PHILADELPHIA, PA.,  
PATENTEE.

THIS invention consists of a loop or U-shaped link pivoted to one draw-bar, in combination with a horn on the other draw-bar, with which the link engages by swinging down over the horn, together with a latch device for holding up the link when uncoupling, and a device for lodging the link on preparatory to coupling and throwing it down over the horn and coupling by the recoil of the draw-bar when the cars run together, the improvement being a simple and efficient device that may be used, together with the ordinary coupling link and pin, on cars of any kind and of different heights, and by which the dangerous practice of going between the cars to couple them may be avoided. The accompanying diagrams illustrate the operation of the device, all as hereinafter fully described.

To couple the cars self-actingly with this form of coupling, a plate, g, is provided, on the bed or platform h of the car, and projecting forward over the draw-bar in suitable relation to the link to allow it to be swung over and rested against said plate, as indicated by dotted lines of Fig. 2, for setting the link preparatory to coupling, which plate will thrust the link forward and cause it to fall down and couple the horn of another car when two cars run together and the draw-bars are forced back against the buffer-springs i.

To hold the link up sufficiently for uncoupling, a latch is arranged, j, on one side of the draw-bar, to be swung up and set under a stud, k, of the link, as shown by dotted lines in Fig. 2, to hold the link until the cars are drawn apart, when the link may be allowed to swing down and hang from the pivot-bolt till required to couple again, and being set up against the plate g for the purpose.

By the wide space between the two bars of

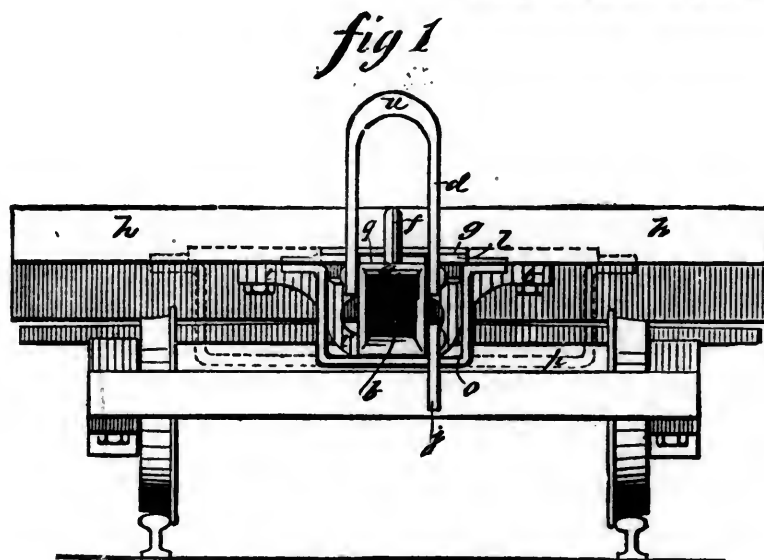
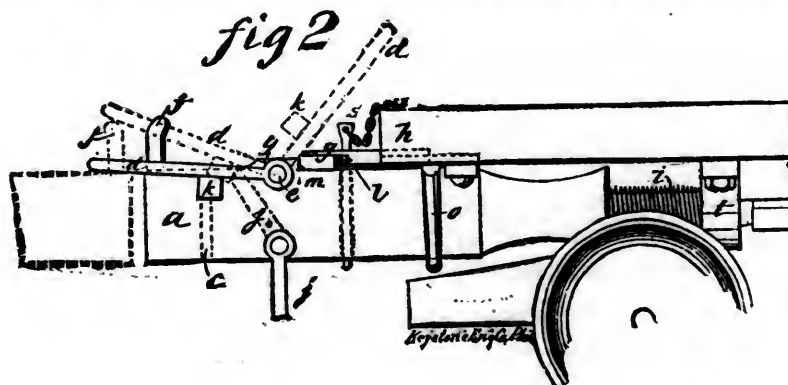


Figure 1 is a front elevation of a platform-car with this car-coupling applied, and Fig. 2 is a side elevation.

A draw-bar, a, of the common form and arrangement is employed, having a socket, b, and pin-hole c, for the use of the common link and pin when required, and the loop or U-shaped link d is connected, to it on a raised portion, g, a suitable distance back of the end, by a pivot-bolt, e, passing horizontally through the two ends of the link and the bar, and being headed at each end, the link being of suitable length to swing forward of the end of the draw-bar sufficiently to drop over a horn f, projecting up from the end of the draw-bar of the car to be coupled on, each draw-bar being provided with a link and a horn, so that when both links are coupled the couplings will be double.

the link, required by the manner of applying it to the draw-bar, the coupling has considerable range for lateral deviation of the draw-bars from the centers, and the links will draw properly in going around curves; but to enable the coupling to connect on any curves, no matter how short, it is proposed to arrange the draw-bars to swing laterally, when required, by arranging them in a supporting-hanger, o, extended, as indicated by the dotted lines p, Fig. 1, and by suitably pivoting them at the back connection, t, and in such case a pin will be employed, s, to connect them with the plate g when they are not required to swing for such purpose. This pin may in such case sustain the draft through the medium of the plate g; or, if desired, the draw-bar or said plate may have a slotted hole for it. The link d will be



made thicker and stronger in the bow u, Fig. 1, than elsewhere, to resist the tendency of the strain to bend it thereat.

It will be seen that by attaching a chain to the link on the tender and suitably leading it into the cab of the engine the engineer can uncouple and couple his engine at any time from his place in the cab. The following advantages are claimed for the inventor in his device. 1. It is automatic or not as may be desired. In many cases it is not desirable to have a coupler which will couple every time two cars are run together. 2. It will couple cars of different heights and kinds. 3. It will couple on curves as readily as on the straight track; the loop being made wide for this purpose. This feature is seldom found in safety couplings. 4. It is the simplest coupling yet patented, but one movable piece being brought into use in coupling. The propping latch can be abolished, as it is only a matter of convenience and not of necessity. 5. It abolishes dead blocks and thus, in a simple and practical manner, settles a vexed question as to the number of blocks necessary to be employed, by supplying a spring buffer of the best construction. 6. It saves the springs from over compression. 7. It contains no springs or loose pieces to be frozen fast, and lost or stolen. The old springs and fastenings are used in the same manner as in the ordinary coupling. 8. A car fitted up with this coupling can be used as soon as the coupling is attached without waiting for a whole train to be completed, as it couples with a link and pin in the ordinary manner. 9. Dead blocks and links and pins cost more and are not permanent fixtures, and the above device is therefore more economical.

#### Safety Truck for Railway Cars.

D. M. KIRKPATRICK, KANSAS CITY, MO., PATENTEE.

THIS invention has for its object the provision of a means to prevent serious lateral displacement to cars equipped with it when derailed, and it consists in a number of cross bars that are arranged between the wheels, and at the ends of the trucks, and are suspended some inches above and cross the track-rails sufficient for the flanges of the wheels to clear the ties, when the car rests on the safety bed, and have their outer ends flanged to correspond with the flange of the wheels. The cross-bars are supported in position by braces extending up to the arch-bars or axle of the main trunk. To the cross-bars are secured a series of longitudinal plates that are of sufficient width to serve the function of runners in case of accident. The plates are arranged in parallel pairs, one pair being at each side of the truck and enclosing the wheels at their sides. The lower front surface of the cross-bars are beveled, or if necessary, may have rollers to facilitate their operation in case of accident. Should a car equipped with this device jump the rails, it will be caught by the flanges of the safety-bed to prevent serious lateral displacement, and the runner-plates which will then support the car, will be drawn over the rails until a stop ensues. As the safety-bed holds the car near and parallel with the track, it can be readily replaced in position on the

track-rails. The truck is attachable to any make or style of trucks at small expense and with little alteration.

#### Sand-Box for Tram-Cars.

GEORGE F. HUNTINGTON OF PHILADELPHIA, PA., PATENTEE.

THE receptacle containing the sand is placed under the seat of the car, and from it a bifurcated pipe conducts the sand to points above the rails and in front of the forward car-wheels. The floor of the sand-box slopes at a sufficient angle to insure the free discharge of its contents, and there is a corresponding deflection of the conduct pipes. The discharge of sand is controlled by a foot-treadle to be operated by the driver of the car. A similar arrangement is devised for the rear end of the car, to avoid the necessity of turning, the floor of the sand-box, in this case, having a double slope from the center.

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## TO INVENTORS

—AND THE—

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Parties having New Patents of any description, which promise to be of value to the Railway trade, are cordially invited to correspond with the undersigned. My practical experience in all details of the trade enables me to judge promptly whether new patents really deserve to be classed among the improvements or not, and advice will be freely and frankly given in every case. When found to possess real merit I will be pleased to assist the inventor or owner in bringing the articles into use.

I wish to be conversant with everything connected with the general Railway Supply Business, and have no old foggy notions. The trade is young and always progressing, and it is my ambition to be abreast of the times—always ahead when I can—in the rear, NEVER. Whenever new inventions recommend themselves to my judgment and experience as improvements, I will find parties to manufacture on royalty or make liberal arrangements for the introduction of the same to the trade as agent.

Trusting, after due consideration of the above matter, you may deem proper to communicate with the undersigned, I remain, awaiting your further pleasure,

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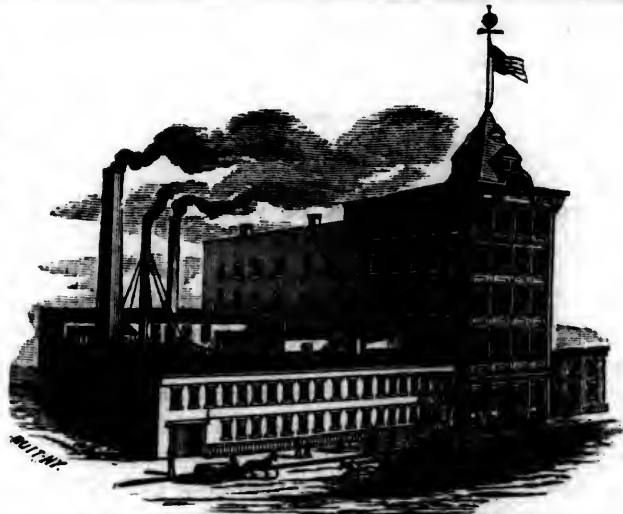
THE UNRIVALLED PRODUCTION OF THE E. M. BOYNTON SAW AND FILE COMPANY—THE RECENT RE-ORGANIZATION.

For a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. BOYNTON, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" law, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion: the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth

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The 12-inch log at bottom of this picture was sawed off by two men by hand in 7 seconds before Commissioners of every country and the Emperor of Brazil.



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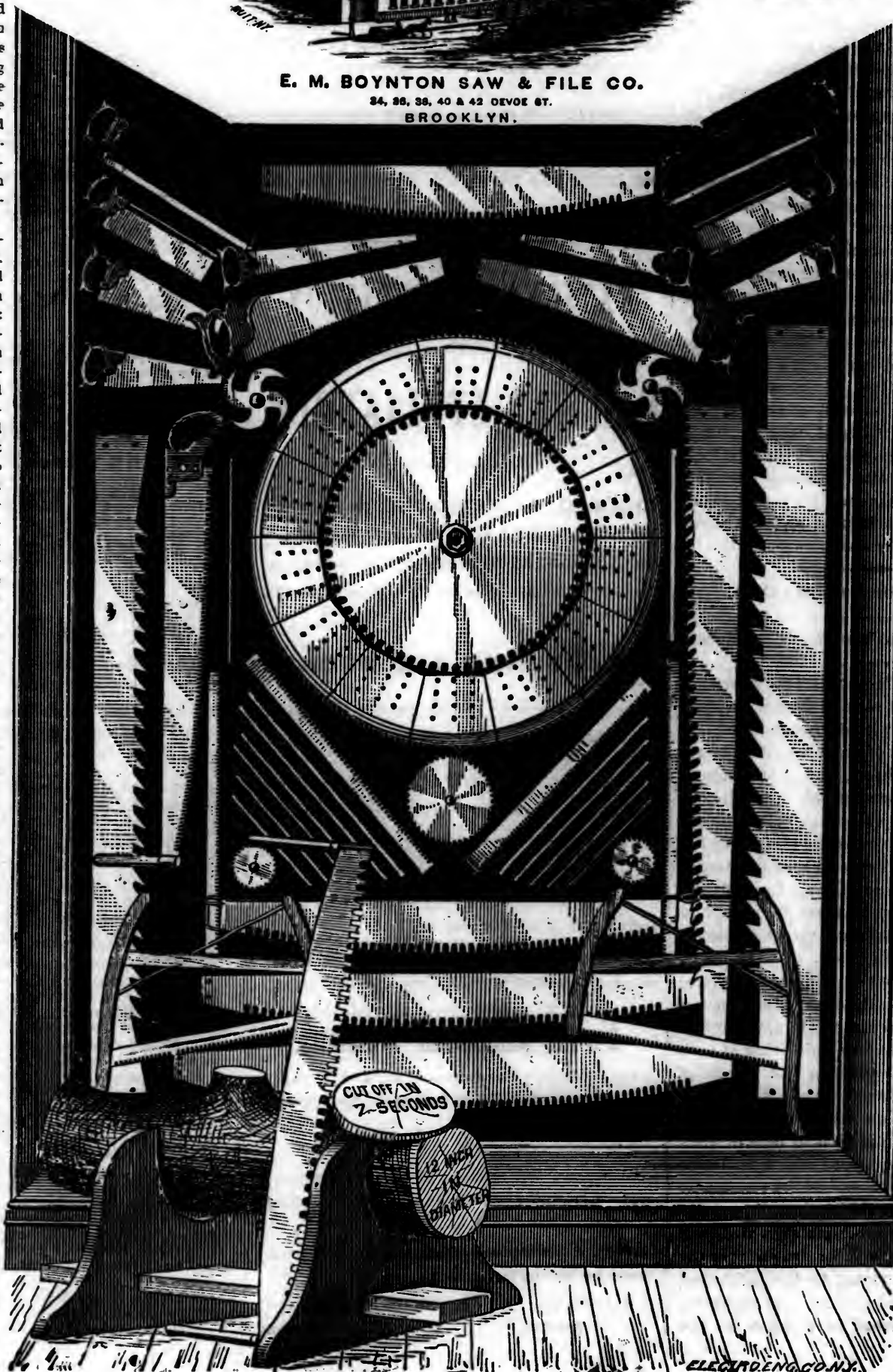
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edge being given with whetstone—saving of friction, as well as files, steel, strength and time. 3d. Doubleteeth—are stiffer, less vibration. 4th. Consequently, may be and are gummed longer, saving expense and frequent repairs. 5th. Are stronger than any other. 6th. Directcutting (upwards) avoids grit, divides resistance, relieves the pressure and wear on point of teeth—avoiding the grinding, weighing and clogging of old style saws. 7th. No waste of power, as in the old scratching system, the cutting being direct, uniform, economical and continuous. 8th. In direct cutting, edge holds longer than if dragged over the timber. 9th. It is the front cut of the hand saw cutting both ways. 10th. This saw cuts with less friction, much easier and faster than any heretofore known, while more simple than any other patent saw. The "Lightning" combines the two principles in one tooth. One point of M follows while the other is cutting, which regulates the feed, and enables the teeth of the plow or vertical form to be used for both cross cutting and slitting. This patent tooth is as simple as any hand-saw tooth to sharpen. Boynton's saws were effectually tested before Judges at the Philadelphia Fair, July 6 and 7. An ash log, eleven inches in diameter, was sawed off, with a four foot "Lightning" cross-cut, by two men, in precisely six seconds, as timed by the Chairman of the Centennial Judges of Class 15. The speed is unprecedented, and would cut a cord of wood in four minutes. The representatives of Russia, Austria, France, Italy, Spain, Belgium, Sweden, England and several other countries were present, and expressed their high appreciation. Many of the leading saw manufacturers of the world were present, but not one accepted Mr. Boynton's \$1,000 challenge. The M principle is applied to saws of various kinds and for all sorts of purposes. In consequence of the practical value of the patents taken out by Mr. Boynton the earnings of the factory have multiplied five-fold in five years, and there is no doubt that an even more rapid growth will be recorded in the future.—*New York Scientific Times and Mercantile Register*, Feb. 3, 1883.

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# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Tramways.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 12.]

NEW YORK, MARCH 24, 1883.

[WHOLE No. 2,447.—VOL. LVI.]

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send to us for use elsewhere within these columns. He  
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We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing us with  
any items of news which may come to their knowledge,  
and are of a suitable nature for our columns. It is our  
intention to publish weekly full and accurate informa-  
tion regarding those enterprises and industries to which  
the AMERICAN RAILROAD JOURNAL is devoted, and to  
effect this end we solicit the co-operation of readers in-  
terested therein. We aim specially to record all new  
railway enterprises in the United States and Canada,  
and to note the progress of construction on all new roads  
and extensions; and we request those concerned in rail-  
way building to give us early information concerning  
the above, that our reports may be as complete as pos-  
sible.

Correspondence and contributed articles are also re-  
quested for our special departments devoted to Finance,  
Commerce, Street Railways, and New Inventions. All  
communications should bear the name and address of  
the writer, not necessarily for publication, but to insure  
the editor's attention.

### ANTI-MONOPOLY RUN MAD.

THERE is in the New York Legislature a  
Senator from this city by the name of JOHN  
G. BOYD, who considers himself an Anti-Mono-  
polist of the most pronounced stripe. The chief  
objects of Mr. BOYD's attacks are the railway  
interests of the State, and no doubt his motives  
in opposing the great railway corporations are  
pure enough to satisfy his conscience. Political  
purity in these days is a willingness to espouse  
the cause of the masses against corporate inter-  
ests regardless of the merits of the question in  
dispute, and from this view we should unhesi-  
tatingly pronounce Senator BOYD a pure politi-  
cian. So great a horror has he of the power  
and influence of railways that his whole time is  
consumed in devising means to check their  
growth by formulating measures to effect these  
ends in the shape of resolutions. Unfortunatel-  
ly his zeal is not equalled by his discretion.  
Though avowedly an anti-monopolist the whole  
tendency of Mr. BOYD's legislation has been in  
the direction of creating a gigantic railway  
monopoly which would completely overshadow  
in power and influence the most arrogant cor-  
poration that has yet provoked the wrath of  
the people. Were Mr. BOYD's various resolu-  
tions presented in crafty language with their  
purposes concealed under a mass of legal ver-  
biage and red tape, he would be pounced upon  
by the press and the public as a corruptionist  
and monopolist of the deepest dye. It is his  
frank candor and ingenuousness that save him  
from resting under this stigma, and instead of  
exciting anger, his ferocious and sweeping reso-  
lutions merely provoke a mild ridicule on the  
part of the press.

The first of Mr. BOYD's conspicuous efforts in  
the way of anti-monopolistic legislation con-  
sisted in a resolution which provided for the  
virtual transfer of the management of railways  
to the State authorities. The happy results  
following the adoption of this measure have

been pictured in an editorial article of the New  
York Sun. Every railway would be a vast  
political machine, manipulated for party ends.  
Every employé of a road from the superinten-  
dent to the flagmen and laborers would be the  
creature of some official. Public comfort and  
public safety would be sacrificed, and every ef-  
fort concentrated to make the railways sub-  
servient to the interests of the party in power.  
Incompetency and inefficiency would be at a  
premium, and the railways of the State would  
form themselves into the most overpowering  
and tremendous monopoly that the wildest  
dread of the people has ever conjured up for  
contemplation. There would be no redress from  
the injustice of railway authorities; the courts  
would be powerless to interfere, and the people  
would be held in a system of bondage from  
which there would be no emancipation. The  
party in power at the time such a measure went  
into effect could hold its supremacy in the face  
of the most determined opposition and com-  
mit any enormities, foster any corruption  
and trample upon the rights of the people with  
perfect impunity. The thousands of new of-  
fice holders necessarily appointed by the adop-  
tion of Senator BOYD's resolution, would be at  
the beck and call of their superiors, ready to  
execute their most audacious measures and con-  
stituting a political power well nigh invincible.  
This is one of Mr. BOYD's "anti-monopoly"  
measures. It is a superior work of statesman-  
ship and a fitting precursor to the substitute  
which he presented when the first was found to  
be impracticable.

The second anti-monopoly measure intro-  
duced by Senator BOYD provided that no rail-  
way shall hereafter be constructed in the State  
of New York until ten per cent of the capital  
stock shall have been paid to the Comptroller  
of the State, who shall use the accumulated  
funds accruing from the interest and dividends  
for the purchase of more stock. We should  
imagine that intelligent monopolists would be



surprised when they are informed that this measure is introduced in their interests. The adoption of this bill would virtually put a stop to all further railway development in the State, leaving the present companies masters of the field without fear of intruders. They would be completely protected against the competition of new companies, as no corporation at the outset of its career could comply with the rigorous condition of this bill with the slightest hope of profitable business.

Briefly stated, these two resolutions embody the anti-monopoly reform contemplated by the brilliant statesman Senator Boyd. If the "bloated bondholders" are really bent upon enslaving the people of the State they cannot serve their own interest better than by encouraging Senator Boyd and working to secure his re-election in the fall. Glaring as are the monopolistic features of his *pseudo* anti-corporation measures, there is some chance of his contemplated bills being adopted in a modified form and becoming laws before their real nature is detected, in which case the arrogant monopolists can don the garb of injured innocence and say with truth to their enemies and opponents, the anti-monopolists, "the bill was none of our creation. It was introduced and fostered by one of your own sympathizers." On the other hand, if the people of New York are anxious to avert the growing evil of corporate influence they had better see to it that the distinguished statesman, Senator Boyd is elected next fall to that position where he may do the most good and the least harm—to stay at home.

### SUNDAY TRAINS.

THE views of American railway managers have undergone a radical change on the question of Sunday travel during the past twenty years. Formerly the roads operating on the Sabbath and running passenger trains upon that day were in the minority, and its officials were regarded askance as being Godless men. To-day Sunday trains are almost universal, and the roads which cease their operations from Saturday night until Monday morning are deemed old foggy and unprogressive. We do not believe the world to be one whit the worse because the stern and dismal Sabbath of our ancestors has given way to a day of rest in the purest sense, and we have no sympathy with those fanatics who decry the running of Sunday trains as a desecration of the Lord's day. Nor have we the least fear that the American Sabbath is doomed to final obliteration, through the growing liberality regarding its observance. Economic reasons, if not religious, will demand the preservation of a day of rest,

and Christianity is too strongly implanted in the hearts of Americans to be uprooted because the present generation see fit to modify the Sabatarian views of the past.

The progress of the age calls for traveling facilities upon Sunday as it calls for Sunday papers, Sunday markets, and Sunday mails. The working classes, to whom Sundays are the only periods of rest throughout the year, plead for the means of cheap and rapid travel upon their day of ease. The professional man, chained to his weary labors throughout the week, demands that upon this day he may recuperate himself with a breath of fresh air and regain his mental strength for the ensuing week. We have yet to learn that the Almighty is more devoutly worshipped within the reeking, stifling walls of city tenements or in the close and heated rooms of city houses than in the pure air and sunshine found at the seashore or in country fields. If it is the hope of the stringent Sabbatarians to force upon the working classes a form of religion that shuts from their view the sight of their Maker's handiwork, what hope of success have they—what wonder that those churches encouraging this heroic sacrifice of health and rest, meet with slim congregations and are visited by few worshipers? Rest is but a form of recreation, and the day of rest provided by this Draconian code of Sunday observance demands the performance of the dreariest kind of task. As a matter of personal preference we would far rather continue our customary daily avocations than pass a Sabbath such as these moralists prescribe.

The late WILLIAM E. DODGE was a conspicuous opponent of Sunday trains, and maintained his position with consistency and courage even to the point of resigning from the management of certain roads which answered to the demands of the times in running Sunday trains. Mr. Dodge was an upright, conscientious man who possessed the respect of all who knew him, but he had the good fortune to be wealthy. It is difficult to imagine a case where he or others like him would feel the need of Sunday trains. If he desired recreation and change of air, he could obtain it at any time, regardless of expense. Had his lot in life been lowlier, his lines falling in places not so pleasant, might not Mr. Dodge's views upon the Sunday question have been somewhat different? Possibly they might; we will not say surely, but possibly.

It is as impossible to adopt a code of religious observances for all classes to follow, as it is to prescribe a universal remedy for all the ailments that flesh is heir to. The recreative needs of labor and capital are as essentially different as their tastes, and their opportunities for rest vary widely, the discrimination being

in favor of those who need it least. Under these circumstances we favor the plea made by the working classes for means of Sunday travel, especially during the summer months. With them, recreation and rest is only possible upon that day, and as they will not devote their entire day to religious ceremonies it is better, even from an ethical point of view that they seek diversion away from their cheerless city homes where the temptations for dissipation abound on every side.

Regarding the point raised by the strict Sabbatarians that the running of Sunday trains necessitates the working of railway employes upon their day of rest is hardly tenable. It would be a singular railway management that would permit the overworking of train hands when a simple system could be adopted by which they could each be assured one day of rest in every week, while so far as the religious scruples of the employes are concerned any talk upon that score is the idlest nonsense. We do not believe there is a railway company in existence that would discharge a train-hand because the latter had conscientious objections to working upon the Sabbath.

Tram-cars run on Sunday and are patronized by the very people who are radically opposed to Sunday railway trains. These same people, when their means permit, will often ride in their carriages to places of worship upon the Sabbath in direct violation of the letter of the fourth commandment, yet they would, if possible, compel their humbler fellow men to be denied those facilities of travel that their meagre resources will permit them to employ. As is in nearly all cases of the kind the former "compound for sins they are inclined to, by damning those they have no mind to." Selfishness plays a prominent part in the contemplated measures of these Sunday reformers, as it does in most reforms that affect one class of persons only. For our part we candidly admit that we cannot perceive the moral distinction between Sunday trains and Sunday tram-cars or the use of private carriages upon that day, and so long as people have to dwell in narrow, dirty streets and swarm in ill-lighted, stifling tenements, in the name of all that's human, let them know that all the world is not the dismal place in which their daily life is passed. So long as fresh air and free sunshine are within their reach only upon a single day of the week, let them seek it upon that day—the day which according to scriptural authority was made for man. If the happy time ever arrives when the working classes are given a week-day to themselves for recreation, then we will be prepared to admit that a stricter observance of the Sabbath may be expected of them than at present, but this weekly holi-

day may be considered as an institution of the very remote future and it is certainly not advocated by those who are now urging the suppression of Sunday trains.

### THE NORTH ATLANTIC STEAMSHIP SERVICE.

A BRIEF cable message from London states that the new Steamship *Fulda*, built for the North German Lloyds Company by the Clyde firm of ELDER & Co., has made the trip through the Channel with a speed of 18 miles per hour. A second dispatch states that the same company has contracted with the same firm for two other ships of the same dimensions and character, to be completed at an early day. Taking the two dispatches together, they may be interpreted to signify much more than appears on the surface. A revolution, or rather a development of Naval Architecture and Marine Engineering, is coming into public view. It has been whispered for nearly a year that Mr. PEARCE, a designer and one of the largest proprietors of this ship-building firm, had discovered a combination of machinery and a model of hull which would attain the same speed with one-half of the fuel; or, what is the equivalent, of moving twice the tonnage with the same amount of fuel—a discovery of such importance as virtually to save millions of dollars in the course of a single year in the steamship service alone.

It is claimed that a vessel with 5,000 tons of cargo can be propelled at a rate of 10 knots an hour, with a consumption of 50 tons of coal per day. When we reflect that the famous ships of the Cunard, White Star, Inman and Guion lines consume from 75 to 125 tons per day in order to drive them at the average rate of 15 knots per hour, it will be seen how great is the economy of fuel, and what is of more importance, the availability for carrying a proportionate increase of cargo. The Guion Line, in which Mr. PEARCE is also said to be interested, has thrown consternation into the ranks of rival lines, by producing first the *Arizona*, and afterward the *Alaska*, which eclipsed all previous performances of trans-Atlantic steamers, so far as time is concerned, and also with less consumption of fuel. The secret of this improvement is one of such value that it is not surprising that advantage should be taken of it to multiply steamers on the same plan. It appears the Germans are among the first to appreciate its significance. The other builders must, necessarily, by some other device, or imitation of this one, meet the requirements of competition, or fall to the rear. This year promises to elicit an interesting struggle for

supremacy among the trans-Atlantic lines plying to New York.

The first effect of this new step ahead, will be to reduce the time of ocean ferriage. At the speed given for the *Fulda*, equivalent to 500 stat. miles in 24 hours, it will be practicable to make the trip between New York and Queens-town in 6 days, and to Liverpool inside of 7. Should the plan be carried out of putting on a line of steamers between St. Johns, New Foundland, and the west coast of Ireland, the ocean passage could be traversed in 3½ days. With a steamer capable of traveling 500 miles per day, there will be less occasion, however, to take the rail to the eastward, as 600 miles would be a fair day's journey by locomotive. On the other hand, it opens up possibilities for steamship service to China, Japan, Australia and even doubling Capes Horn and Good Hope with fast boats, which has heretofore been impossible on account of the space required for coal.

### EDITORIAL NOTES.

GOVERNOR CLEVELAND has met with an early vindication of his position in vetoing the Five Cent Fare Bill. Pursuant to a resolution of the New York Senate, the State Engineer and Surveyor has made an examination into the affairs and management of the elevated roads of this city, and submitted his report, which may be found in the news columns of this week's JOURNAL. The report virtually disproves the blatant charges of corruption and illegality on the part of the corporations. We did not expect that the elevated roads would so soon be freed from the above charges, nor that this freedom would be acquired through the official utterances of the State Engineer, in so unqualified a manner. But such is the case, and the Five Cent Fare Bill is a thing of the past not to be revived in its original form. Of course, so long as the elevated roads conduct a profitable business, there will be persons in plenty eager to attack them and cripple them with arbitrary legislation, but for the present at least, the anti-corporationists have received an effectual repulse at the hands of New York's Executive. The veto has stood despite the sneers of the disappointed statesman, who sought to make political capital out of their antagonism to invested wealth, and every subsequent disclosure has tended to prove the justice of Governor CLEVELAND's objections to the provisions of the bill.

In a spasm of virtue the members of the New York Legislature are considering the advisability of passing a bill prohibiting any railway doing business in the State from issu-

ing passes to any persons, either gratuitously or at a reduction from the ordinary rates extended to the public. Senator GRADY made an heroic effort to rescue clergymen from this wholesale slaughter of the *genus mortuum-caput* but his attempt was unavailing. The clerical gentlemen who have hitherto enjoyed the blessings of free passage or reduced fares, will in the future, if the contemplated measure becomes a law, be compelled to buy their tickets on the same terms as the mundane public. Candidly speaking, the free pass system has grown to such disastrous proportions, that railways would deem any legislative action tending to abate this evil a welcome relief.

THE position of the elevated railroads is somewhat ambiguous. It is not yet clear to our mind whether we should class them among tramways, and so include them as proper subjects for mention in the tramway department of the JOURNAL, or consider them as railways in the ordinary sense of the word. According to our definition of tramway given last week, an elevated road is clearly not included thereby, and yet they can hardly be considered as railways in the common acceptance of the term. Possibly they are a class by themselves and may demand a separate department. If so we shall wait until they become a little more numerous before we set apart a portion of the RAILROAD JOURNAL for the consideration of their individual interests, and in the meantime, for the present at least, will class them among the railways.

THE publication of the premium list of the approaching Railway Exposition is concluded in the News Department of this issue. The awards are stated for special excellence in the last three departments, devoted to Oils, Paints and Varnishes, Miscellaneous Appliances, and Appliances for Tramways. We do not grudge the space hitherto given in the JOURNAL to place full particulars of the enterprise before our readers, nor shall we discontinue mentioning the Exposition in our editorial and news columns. Any information received that would prove of interest to, and further the cause of the display, will be promptly published.

THE pressure of financial and commercial news upon the space devoted to these departments is so great this week that we omit our customary editorial leaders upon appropriate topics. We are sufficiently modest to believe that our readers would prefer to be furnished with the latest news appertaining to finance and commerce than to be edified with our editorial opinions at a sacrifice of this desired information.



## NEWS DEPARTMENT.

[Items of information suitable for this department and especially those adapted for the columns devoted to the Organization, Incorporation, Construction and Consolidation of Railways, are earnestly desired from our readers.]

## Premium List of the National Railway Exposition.

(CONCLUDED FROM LAST WEEK.)

## PREMIUM LIST.

## DEPARTMENT G.

## OILS, VARNISH AND PAINTS.

Best Display of Passenger Car Body Colors, Including Samples of Work.....	Gold Medal
" " of Freight Car Body Paints, Including Samples of Work.....	Silver
" " of Head Lining and Wood Filler, Including Samples of Work.....	" "
" " of Railway Passenger Car Varnishes, Including Samples of Work.....	Gold
" Lard Oil.....	Silver
" Lubricating Oil (Passenger Car).....	" "
" Lubricating Oil (Freight Car).....	" "
" Headlight Oil, 175° Fire Test.....	" "
" Lamp Oil, 300° Fire Test.....	" "
" Valve Oil.....	" "
" Car Grease.....	Bronze
" Oil Testing Machine.....	Silver
" Oil Can.....	Bronze
" Oil Feeder.....	" "
" Oil Tank with Pump.....	" "
" Automatic Oilier.....	" "
" Packing.....	Silver

## DEPARTMENT H.

## MISCELLANEOUS.

" System for Lighting Depots and Shops by Electricity.....	Gold
" Leather Belting.....	Silver
" Rubber Belting.....	" "
" Fire Clay Brick.....	Bronze
" Iron Bridge (Working Model or otherwise).....	Gold
" Wooden Bridge (Working Model or otherwise).....	" "
" Crane.....	" "
" Coal Chute.....	Silver
" Conductor's Lantern.....	" "
" Conductor's Ticket Punch.....	" "
" Derrick.....	" "
" Rock Drill (Power).....	" "
" Car Gong.....	Bronze
" Hydraulic Jack.....	Silver
" Lever Jack.....	Bronze
" Cotton Hose.....	" "
" Linen Hose.....	" "
" Rubber Hose.....	" "
" Brake Hose.....	" "
" Tank Hose.....	" "
" Nuts (Hot Pressed).....	Silver
" Nuts (Cold Pressed).....	" "
" Portable Forge.....	Bronze
" Pulley Block.....	" "
" Speed Recorder.....	Silver
" Car Truck Shifting Apparatus.....	" "
" Boiler and Pipe Covering.....	" "
" Rock Crusher.....	" "
" Track Signal (Torpedo).....	Bronze
" Crossing Signal.....	Silver
" Surveyor's Transit.....	" "
" Surveyor's Field Glass.....	Bronze
" Surveyor's Compass.....	Silver
" Surveyor's Quadrant.....	" "
" Display of Surveyor's Instruments.....	Gold
" Variety Engineer's Drawing Tools.....	Bronze
" Engineer's Level.....	" "
" Engineer's Barometer.....	" "
" Set Engineer's Railway Curves.....	" "
" Leveling Rod.....	" "
" Prismatic Compass.....	" "
" Tire Heater.....	" "
" Turn Table (Working Model or otherwise).....	Gold
" Conductor's or Engineer's Watch.....	Silver
" Train Badge.....	Bronze
" Switch Lamp.....	Silver
" Wire Rope.....	" "
" Rear Signal Lamp.....	Bronze
" Target Lamp.....	" "
" Safety Gate for Crossing.....	Gold
" Power Blower.....	Silver
" Hand Blower.....	Bronze
" Coal for Locomotives.....	Silver
" Syphon.....	Bronze
" Time Detector.....	" "
" Culvert Pipe.....	Silver
" Flanger Device to Remove Compact Snow and Ice from Between the Rails, and a Proper Space Outside the Track.....	Gold
" Elevated Railway System.....	" "

Best Electric Railway.....	Gold Medal
" Iron Chain.....	Silver
" Steel Boiler Flue (Lap Welded).....	" "
" Iron Boiler Flue (Lap Welded).....	" "
" Copper Boiler Flue.....	" "
" Seamless Copper Pipe.....	" "
" Seamless Brass Pipe.....	" "
" Gray Iron Castings.....	Bronze
" Malleable Iron Castings.....	" "
" Steel Castings.....	" "
" File.....	Silver
" Automatic Switch.....	" "
" Switch Signal Device.....	" "
" Electric Signal Device for Block or other Signals.....	Gold
" Sign for Railway Crossings.....	Bronze
" Axle Carrier.....	" "
" Axle Lift.....	" "
" Tail Lamp.....	" "
" Railroad Lantern.....	" "
" Semaphore.....	Silver
" Semaphore Lens.....	" "
" Uniform for Train Men.....	" "
" Snow Plow.....	Gold

## DEPARTMENT I.

## STREET RAILWAY APPLIANCES.

" Iron Wheel.....	Silver
" Combination Wheel.....	" "
" Rail.....	" "
" Rail Joint.....	" "
" Car.....	Gold
" Car Spring.....	Silver
" Draw Spring.....	Bronze
" Street Car Gong.....	" "
" Bell Cord and Fixtures Complete.....	" "
" Fare Box.....	Silver
" Center Lamp.....	" "
" End Lamp.....	Bronze
" Hand Rail Bracket.....	" "
" Hand Rail Socket.....	" "
" Journal Bearing.....	" "
" Door Locks.....	" "
" Window Fixtures.....	" "
" Window Blinds Complete.....	" "
" Registering Punch.....	" "
" Registering Device.....	" "
" Track Cleaner.....	Silver
" Sheave for Sliding Door.....	Bronze
" Change Gate.....	" "
" Door Hook and Plate.....	" "
" Door Handle.....	" "
" Door Roller.....	" "
" Hame Bell.....	" "

## INCORPORATION.

THE Legislature of Maine, at its recent session granted acts of incorporation to the following Telegraph and Telephone Companies, to the Harrison and Bridgton Telegraph Company, for the construction of a telegraph line from Bolster's Mills, in the town of Harrison, to any point in the town of Bridgton; to the Brunswick and Harpswell Telegraph and Telephone Company, for the construction of a line from Brunswick to Pott's Point and Orr's Island in the town of Harpswell; to the Bar Harbor and Ellsworth Telegraph Company, for the construction of a line from Bar Harbor through the town of Trenton to some point in the city of Ellsworth, and also from Bar Harbor through Mt. Desert to Ellsworth; to the Rangeley Telephone and Telegraph Company, for the construction of a line from Phillips to Indian Rock, in the town of Rangeley, or any intermediate point, with branch lines to Lake Umbagog or any other point on the Rangeley chain of lakes; to the North Franklin Telephone Company, for the construction of a line from Strong to Eustis, with branch lines to New Portland, Anson and Salem; to the Rockland and Vinalhaven Telegraph and Telephone Company, for the construction of a line from Rockland to North Haven and other towns; to the Bethel and Umbagog Telegraph and Telephone Company, for the construction of a line from Bethel Hill to Cambridge, N. H.; to the Atlantic Telegraph Company, for the construction of lines anywhere in the State; to the Ellsworth and Deer Isle Telegraph Company, for the extension of

its line from Ellsworth to Bangor; and the construction of a telephone line is also authorized from Princeton to Grand Lake Stream.

Acts of incorporation have been granted by the Legislature of Maine to the following railroad companies, viz: to the Bethel and Northern Narrow Gauge Railroad Company for the construction and operation of a narrow gauge road from some point in Bethel, Greenwood or Woodstock to Richardson or Umbagog Lakes; to the Mechanic Falls, Poland and Gray Railroad Company for the construction and operation of a road from some point on the line of the railroad leading from Mechanic Falls to Canton, through the towns of Minot, Poland, New Gloucester and Gray to a point on the Maine Central Railroad in the towns of Gray, North Yarmouth or Cumberland; to the Merchants' Marine Railway Company for the construction of a railway and wharves at Cape Elizabeth and the carrying on of any business connected therewith; to the York Harbor and Beach Railroad Company for the construction and operation of a railroad from some point on the Portland, Saco and Portsmouth Railroad in the town of Kittery or York to Union Bluff in the latter town.

THE Chicago, St. Louis and Pittsburgh (late Columbus, Chicago and Indiana Central) has been organized with the following board of directors: William L. Scott, John B. Drake, R. Biddle Roberts, J. N. McCullough, Thomas D. Messler, George Briggs and William Borner. This company recently executed in favor of Conrad Baker, of Indianapolis, and the Union Trust Company, of New York, as trustees, a first mortgage for \$22,000,000, payable October 1, 1932. The new company is organized subordinate to and in the interest of the Pennsylvania Company.

ARTICLES of incorporation of the Mexican Peninsular Telegraph and Telephone Company were filed in the office of the County Clerk on the 15th inst. The capital is \$500,000, made up of 50,000 shares of \$10 each. The incorporators are Frederick M. Delano, Henry C. DeRivera and Charles Rabadan. The purpose of the company is to construct a telegraph line from New York, over Staten Island, through New Jersey and by way of Yucatan, Campeche, Tabasco and Chipas, to the State of Oajaca, in Mexico.

AN act relating to corporations in Maine, recently passed by the Legislature of that State, provides that they may be organized under the general law with a capital not less than \$1,000 nor more than \$2,000,000, and if a corporation is first organized with insufficient capital the same may be increased by a vote of the stockholders to a sum not exceeding the above maximum amount.

THE Alton Rolling-Mill Company, of Alton, Ill., has been incorporated; capital stock, \$25,000. The incorporators are James T. Drummond, Charles H. Randal, James W. Kerr, John Haynod, Frederick W. Drury and W. Pierce.

ARTICLES of incorporation were filed with the Secretary of State of Ohio on the 13th inst., of the Ashland and Jeromeville Short Line Railroad Company; capital stock \$50,000.

## ORGANIZATION.

At a meeting of the stockholders of the Virginia Midland Railway, held at Alexandria, Va., on the 20th inst., the directors elected in the interest of the Baltimore and Ohio Railroad Company in December last resigned and new directors were elected in their places. The board now consists of the following gentlemen: J. S. Barbour, T. M. Logan, John McAnerny, W. P. Clyde, W. N. Payne, M. Bayard Brown, William Keyser, Skipwith Wilmer, Jos. Bryan, Robert T. Baldwin, George Parsons, C. J. Osborne, J. T. Lovell, J. A. Rutherford, W. Bayard Cutting, A. S. Buford, and C. G. Holland. A resolution was passed directing the payment on the 15th of April of interest on the income bonds of the company due January 1, 1883.

At the annual meeting of the stockholders of the Missouri Pacific Railway Company, held in St. Louis, Mo., on the 13th inst., the following directors were elected, being the same as those composing the board during the previous year: Jay Gould, New York; R. S. Hayes, St. Louis; A. L. Hopkins, Russell Sage, Fred L. Ames, William F. Buckley, Sidney Dillon, Thos. T. Eckert, Geo. J. Forrest, Samuel Sloan, H. G. Marquand, Geo. J. Gould, New York; S. H. H. Clark, Omaha, Neb.

At the annual meeting of the stockholders of the Kansas City, St. Louis and Chicago Railroad Company, held on the 13th inst., the following directors were elected: P. H. Rea, Marshall, Mo.; Thomas Shackelford, Glasgow, Mo.; John J. Mitchell, St. Louis, Mo.; John M. Woodson, St. Louis, Mo.; R. P. Tansey, St. Louis, Mo.; Geo. Straut, Chicago, Ill.; W. H. Mitchell, Chicago, Ill.; George M. Shelley, Kansas City, Mo.; H. J. Higgins, Higginsville, Mo.

At the annual meeting of the stock and bondholders of the Atlanta and Charlotte Air Line Railway Company, held in this city on the 14th inst., the following board of directors were elected: Hiram Sibley, William H. Fogg, Eugene Kelly, P. P. Dickinson, Richard Irvin, Jr., H. W. Sibley, Skipwith Wilmer, B. R. McAlpine, James H. Young, R. A. Lancaster, Jas. E. Grannis and Robert Slobbo. H. W. Sibley was re-elected president.

At the annual meeting of the Pittsburgh, Cincinnati and St. Louis Railway Company, held in Columbus, Ohio, on the 20th inst., the following board of directors was elected: G. B. Roberts, J. W. McCullough, William Thaw, Thomas D. Messler, R. Sherrard, Jr., David S. Gray, Henry H. Houston, Wistar Morris, J. N. Du Barry, W. H. Barnes, J. P. Wetherill, G. W. McCook, and John P. Green.

At the annual meeting of the stockholders of the Broadway Underground Railway Company, held on the 13th inst., the following were elected directors for 1883: Ex-secretary, William Windom, Melville C. Smith, Judge Henry C. Gardiner, Jerome Fassler, Sr., and Edward M. Clymer. Melville C. Smith was re-elected president, Edward M. Clymer treasurer, and J. Cummins secretary.

At the annual meeting of the stockholders of the Toledo, Cincinnati and St. Louis (narrow gauge) Railway Company, held at Toledo, Ohio, on the 20th inst., the following directors

were elected: George William Ballou, of New York; John McNab, of Gloversville, N. Y.; Theodore Adams, of Philadelphia; G. C. Moses, of Bath, Me.; and John Felt Osgood, of Boston, Mass.

The directors of the St. Louis and San Francisco Railway Company, elected on the 13th inst., met on the 19th and organized by the election of the following officers: Edward F. Winslow, president; C. W. Rogers, vice-president and general manager; James D. Fish, second vice-president; T. W. Lillie, secretary and treasurer; George Butler, assistant treasurer.

The officers of the National General Passenger and Ticket Agents' Association, elected on the 14th inst., are: Lucius Tuttle, of the Eastern Railroad, president; C. A. Taylor, of the Richmond, Fredericksburg and Potomac Railroad, vice-president; A. J. Smith, of the Cleveland, Columbus, Cincinnati and Indianapolis Railway, secretary.

## CONSTRUCTION.

The terms of agreement between the Oregon and Transcontinental Company and the Oregon and California Railroad Company, which were ratified at a meeting of the preferred stockholders of the latter company held in London on the 17th inst., are as follows: First, the Oregon and Transcontinental Company shall complete and equip the remaining 125 miles of the Southern Extension, and receive therefor \$3,600,000 first mortgage bonds, issued at the rate of \$20,000 per mile, and \$3,800,000 second mortgage bonds; Second, the Oregon and Transcontinental Company shall lease the Oregon and California system for 999 years, paying as a rental, first, the amount of the fixed charges, being interest on the first and second mortgage bonds; Second, \$20,000 a year to maintain the organization of the Oregon and California Company; Third, \$300,000 per annum for 3½ years, to be distributed as dividends at the rate of 2½ per cent per annum on the preferred stock of the Oregon and California Company; and, Fourth, to pay from and after July 1, 1886, to the lessor company 35 per cent of the gross earnings, with a guarantee that this percentage shall be sufficient to pay the fixed charges, \$20,000 per annum, for maintenance of organization and a minimum of 2 per cent dividend on the preferred stock.

It is stated that the right and franchise of the Pennsylvania and Sodus Bay Railroad have been bought by a syndicate of capitalists, who propose to begin operations early in the spring and complete it as far as Spencer, Tioga county, N. Y., by September, ultimately forming a through line from Lake Ontario to Philadelphia. This road begins at Great Sodus Bay north, and runs southerly, crossing both branches of the New York Central Railroad, and passing between Cayuga and Seneca lakes, to Tompkins county, through various towns there, including Enfield, Newfield, etc., to the town of Spencer, Tioga county. The grading for the road was done along a large portion of the line as early as 1868 or 1869. The towns along the lines, in many cases, were bonded heavily for the construction of the road, and there were many

private subscriptions to aid the enterprise. The building of the Ithaca and Tonawanda Railroad, afterward the Ithaca and Athens, and later still the Geneva, Ithaca and Sayre, now a division of the Lehigh Valley Railroad, put a quietus upon the line which it is now proposed to build.

WITHIN two months another transcontinental line will be opened by the completion of the Atlantic and Pacific Railroad to a connection with the Southern Pacific. The former road, which is pushing its way over the 550 miles between Albuquerque, New Mexico, and the Colorado River in Arizona, is now nearing its destination. The Southern Pacific is extending a branch about 240 miles long from Mohave, Cal., to meet it, and this is also approaching the point of junction. By May 1 it is expected that the meeting will be effected, completing a line about 800 miles long, running due east and west over an unpeopled wilderness, and giving a new route to San Francisco some 250 miles shorter than by way of Deming and the Southern Pacific main line. The new route will also be shorter from Kansas City than the present via Denver and the Union and Central Pacific by some 50 miles, the distance from Kansas City via Albuquerque and Mohave being about 2,100 miles.

THE East and West Railroad of Alabama is now under contract from the junction with the Selma Division of the East Tennessee, Virginia and Georgia Railroad at Germania, Ala., west to Broken Arrow, a distance of forty miles. About 12 miles are graded and some of the bridge work done, and the contracts call for the completion of the work by September. As soon as this section is finished, work will be begun on the line from Cedartown, Ga., to Germania, about 30 miles. The company does not expect to let any contracts between Broken Arrow and Birmingham until these two sections are finished.

THE New River division of the Norfolk and Western Railroad, the completion of which to its terminus at Pocahontas, Va., was formally celebrated on the 13th inst., leaves the main line at New River station, 302 miles from Norfolk, and runs northward and westward to Pocahontas, which is in Tazewell county, Va., close to the West Virginia line. The branch is seventy-five miles long and about one-third of it is in West Virginia. Shipments of coal to Norfolk and other points on the line are already being made.

On the Memphis Extension of the Kansas City, Fort Scott and Gulf Railroad the track is laid to Koshkoning, Mo., eleven miles southeast from the late terminus at West Plains, 124 miles from Springfield, Mo., and 325 miles from Kansas City. From the new terminus to Memphis the distance is 152 miles, and some forty miles of track have been laid from the crossing of the St. Louis, Iron Mountain and Southern Railway in Arkansas.

It is understood that the New York, Chicago, and St. Louis Railway, although purchased in the interest of the Lake Shore and Michigan Southern Railway Company, will not be used for the business of the New York Central and Hudson River Railroad. It is regarded as a



natural tributary of the New York, Lake Erie and Western and the New York, Lackawanna and Western railroads.

MEN are at work on the Megantic and Moosehead Lake Railroad across the northern part of Somerset county, Maine. They are blasting on the American side near the boundary, and nine miles of road beginning at the west line of the State and running east toward Moose River are under contract, to be completed and iron laid by the 1st of November.

Gooch & Co. have taken the contract for the construction of the Richmond and Alleghany Railroad from the "Point Mills" within the corporate limits of Lexington, Va., to the line of the Valley Railroad. This means an expeditious and substantial finishing up of the R. & A. to its Lexington connection with the Valley Railroad.

ACTIVE preparations are being made for the early resumption of work on the Columbus and Cincinnati Railroad, which when completed will connect Columbus with the Toledo, Cincinnati and St. Louis system of roads, now so rapidly extending over the country. The distance by this line between Columbus and Cincinnati will be 110 miles.

THE stockholders of the Bell's Gap Railroad Company have voted to increase the capital stock from \$350,000 to \$500,000, the new stock to be used for the extension of the road to some new coal mines four miles beyond the present terminus at Coalport, Pa., and for the purpose of changing the road from three feet to standard gauge.

It is stated that the Ohio River Railroad, which was first talked of in 1872, will be built during the present season. It will extend from Cincinnati to Point Pleasant, West, Va., following the river on the Ohio side. At Point Pleasant it will connect with Senator Camden's road, which is now being built from that point to Wheeling.

THE Georgia Pacific Railroad will soon be opened to Anniston, Ala. The distance from Atlanta to Anniston is 103 miles, thence to Birmingham via Calera 104 miles, making a total from Atlanta to Birmingham of 207 miles. There are sixty-six miles of track to lay before it can reach Birmingham direct.

THE Corpus Christi and Pacific Railroad Company has been organized to build a railroad from Corpus Christi, Texas, west by north through the Nueces Valley to Uvalde, on the Galveston, Harrisburg and San Antonio Railroad. A branch to San Antonio is also proposed.

THE track on the extension of the St. Louis and San Francisco Railroad from Pacific, Mo., to St. Louis has been laid from Pacific east to Eureka, seven miles. The bridge over the Meramec River near Eureka is completed and track-laying is advancing steadily.

THE surveyors of the New York, Lake Erie and Western Railroad Company are now engaged in running the line for a new road which it is proposed to build through the salt fields recently discovered in the vicinity of this place.

THE Attorney-General, to whom the question

was referred by the President, decides that the Canada Southern Railway Company cannot construct a bridge over the Niagara River except by special act of Congress.

It is announced that the Chicago and Atlantic Railway will be formally opened for local business April 15, and will probably be prepared to run through trains to New York, via the New York, Pennsylvania and Ohio and the New York, Lake Erie and Western railroads.

THE Goldsborough Creek Railroad Company has been organized to build a railroad from a point on Puget Sound, in Mason county, Washington Territory, into a rich timber district.

THE Des Moines, Osceola and Southern Railroad is now completed to Decatur, Ia., 25 miles southwest of the late terminus at Davis City, and ninety-five miles from Des Moines.

THE Texas Midland Company has been organized to build a railroad from Waco, Texas, to Palestine, through the timber belt. The distance is 95 miles.

TRACK laying has been commenced at Zanesville, Ohio, on the Bellaire, Zanesville and Cincinnati Railroad.

### The New York Elevated Railroads.

THE State Engineer and Surveyor sent to the Senate on the 20th inst. a communication in response to the resolution of the Senate calling for information relative to the New York elevated railroads upon which to base legislation looking to a reduction of fare. The communication inclosed the reply of the Attorney-General previously transmitted to the Senate, together with a letter addressed to R. M. Gallaway, vice-president of the Manhattan Railway Company, requesting the views of his company on the matter, and a copy of Mr. Gallaway's reply inclosing "observations by the counsel of the Manhattan Railway Company respecting the question involved in the correspondence with the Attorney-General."

The counsel for the company says that "the New York Company insists that its sacrifices made in good faith to obtain the cash needed, should be included as a part of the cost," and elaborates this conclusion by a long argument. There is also inclosed a letter from H. V. & H. W. Poor addressed to Mr. Gallaway taking the same view as that expressed by the counsel.

The State Engineer and Surveyor regrets exceedingly that the opinion of the Attorney-General was not asked as to the proper legal construction to be placed upon the term "the capital of the company actual expended" as used in the Senate resolution and the law to which it refers before the facts as to the identity of the railway corporations with the construction companies and parties contracting to build and equip the elevated railways were fully ascertained, for the reason that, by so doing, the Attorney-General and both the Comptroller and himself (the State Engineer) have been placed in a comparatively false position. The State Engineer arrives at the following conclusions:

1. That no fraud has been either exercised or attempted on the part of these corporations as against the State at large, the public or individuals, with reference to the

amount of capital actually expended, the actual cost of construction and equipment, or the rates charged for transportation.

2. That the amount of securities issued by the respective corporations as represented by their outstanding stock and bonds was no greater than was actually required in order to provide the means necessary to secure the proper construction and equipment of their railways, and that the whole amount of these securities has either been absorbed or utilized in good faith for that purpose.

3. That it is the common practice of railway corporations, both in this State and the United States, to charge the losses or discount on their securities to the cost of construction, equipment and other necessary expenditures, and there appears to be no valid reason why these elevated railway corporations should be inhibited from pursuing the same cause.

4. That the roads were at first regarded as wild and visionary undertakings, and it required years of the closest study accompanied by experiments before their conception became sufficiently developed to induce capitalists to invest in their securities upon any terms, and even at the present time their final and permanent success must be regarded as exceedingly problematical, etc.

5. That with regard to the Manhattan Railway Company, which is now the lessee and operator of the railways of the other two companies, he is unable to see that its stock should be regarded in any degree as a factor in the capital actually expended by the lessor companies in the construction and equipment of their lines.

The examination of the State Engineer shows the following:

#### NEW YORK ELEVATED ROAD.

Capital actually expended—	
Capital stock .....	\$6,500,000
First mortgage 7 per cent bonds .....	8,500,000
Cash .....	391,921
Total capital expended .....	\$15,391,921
Business of the year—total earnings .....	\$3,216,369
Deduct transportation expenses .....	\$1,844,690
Taxes .....	208,463—2,053,153
Surplus .....	\$1,163,216
Equal to 7.55 per cent on capital expended.	
METROPOLITAN ELEVATED ROAD.	
Capital actually expended—	
Capital stock .....	\$6,500,000
First mortgage 6 per cent bonds .....	10,818,000
Second mortgage 6 per cent bonds .....	2,000,000
Cash .....	172,868
Total capital expended .....	\$19,490,869
Business of the year—total earnings .....	\$2,757,264
Deduct transportation expenses .....	\$1,823,680
Taxes .....	202,088—2,025,768
Surplus .....	\$731,496
Equal to 3.75 per cent on capital expended.	

### Missouri Pacific Railway.

THE following report of the operations of the Missouri Pacific Railway Company, during the year ending December 31, 1882, was submitted by R. S. Hayes, first vice-president, at the annual meeting of the stockholders held in St. Louis on the 13th inst.:

The mileage operated December 31, 1882, comprised 990 miles of main track and 194 miles of side track, an increase during the year of 205 miles of main track.

The equipment at the close of the year was: Locomotives, 152; passenger cars, 81; baggage, mail and express cars, 30; stock cars, 533; box cars, 2,474; flat and coal cars, 1,475; cabooses, 93; road service cars, 27; refrigerator cars, 100; total cars, 4,813, together with three transfer and ferry boats.

The capital stock of the company December 31, 1882, was \$29,958,900.

The amount of funded debt December 31, 1882, was \$25,379,000.

The gross earnings for the year were \$8,094,818.75, showing an increase of \$1,372,141.70.

The operating expenses for the year (including all improvements, betterments, taxes, etc.), were \$4,476,210.07, showing an increase of \$848,055.23.

The ratio of operating expenses to earnings (including improvements, betterments, taxes, etc.), was 55 per cent.

The cost of all improvements and betterments was charged to operating expense, there being no improvement or betterment account, and no expenditure was charged to construction, excepting the first cost of the roads constructed, with their equipment.

The total amount of improvements and betterments included in operating expenses was \$409,799.48.

The net earnings for the year (after payment of expenses, taxes and cost of improvements and betterments) were \$3,618,408.68, showing an increase of \$549,573.48.

The main track contained at the close of the year 718 miles of steel, or 72 per cent.

The value of the property was thoroughly maintained and improved during the year. There were added 25 miles of new side-track, 53 miles of steel rail replacing iron, 308,507 cross and switch ties, 48 miles of ballast (25 miles of rock ballast) 81 miles of fence.

Repairs were made to 238 engines, 111 passenger cars and 1,826 freight cars. There was expended for buildings, platforms, etc., \$100,074.78; for bridges, trestles and openings, \$181,834.88; for repairs and expenses of water stations, \$50,325.38.

A second track from St. Louis to Laclede (eight miles) was completed with steel rails, ballast and iron bridges.

All construction in progress during the year was finished, with the exception of the extension of the Jefferson City, Leavenworth and Southwestern Railway from Cooper to Osage River, about six miles of which will soon be completed.

#### St. Louis, Iron Mountain and Southern Railway.

THE following is a summary of the business of the St. Louis, Iron Mountain and Southern Railway, as presented by R. S. Hayes, first vice-president of the company, at a meeting of the stockholders held in St. Louis on the 13th inst:—

The mileage of the road December 31, 1882, consisted of main track, 882 miles; side track, 173 miles; increase in main track during the year, 163 miles.

The main track contained at the close of the year 689 miles of steel, which was 78 per cent of the whole mileage.

The locomotive and car equipment at the same time was: Locomotives, 141; passenger cars, 62; baggage, mail and express cars, 34; stock cars, 576; box cars, 2,447; flat and coal cars, 1,433; cabooses, 64; road service cars, 23; refrigerator cars, 100; total cars, 4,839. In addition to the above equipment two transfer and ferry boats are in use at Cairo and Belmont.

The capital stock at the close of the year

amounted \$22,840,085, and the funded debt to \$33,929,901.27.

The gross earnings for the year ending December 31, 1882, were \$7,582,208.72, an increase over 1881, of \$178,976.77.

The operating expenses for the year ending December 31, 1882 (including taxes, improvements and betterments, etc.), were \$3,910,883.10, a decrease as compared with 1881, of \$1,020,980.60.

The ratio of operating expenses (including taxes, improvements and betterments, etc.), to earnings was 51 per cent.

The cost of all improvements and betterments was charged to operating expense, there being no improvement or betterment account, and no expenditure was charged to construction excepting the first cost of the roads constructed, with their equipment.

The total amount of improvements and betterments included in operating expense was \$277,321.18.

The percentage to total operating expenses was 0.07.

The net earnings for the year (after payment of expenses, taxes, improvements, betterments, etc.), were \$3,671,325.62, an increase over 1881 of \$1,199,957.37.

The maintenance and improvement of the property during the year included the following items of material used and work performed: 23 miles new side track; 79 miles steel rails replacing iron; 375,709 cross and switch ties put in; 68 miles ballast; 117 engines repaired; 67 passenger cars repaired; 1,987 freight cars repaired; 71 buildings and platforms erected; 19 bridges, trestles and openings built.

The only construction in progress at the close of the year was upon the White River Branch, Newport to Batesville (26 miles), of which 13 miles remain to complete, and the Doniphan Branch, Neeleyville to Doniphan (20 miles), of which 10 miles remain to complete. Almost the entire expenditures had been made upon them before the close of the year, and their completion will only occupy a short period.

#### Illinois Central Railroad.

THE entire line of the Illinois Central Railroad proper, as well as that from Cairo to New Orleans is now laid with steel rails. The betterments in Illinois in 1883, it is estimated will not exceed \$500,000. The company, January 1 last, took formal possession of the Chicago, St. Louis and New Orleans Railroad, which will hereafter be known as the Southern division, and which increases the Illinois Central's mileage 1,908.65 miles. During the year \$4,422,700 of the stock of the Chicago, St. Louis and New Orleans Railroad Company was exchanged for the Illinois Central Company's leased line stock certificates, bearing four per cent interest. Of this sum, \$1,100,000 was issued against stock formerly held by the Illinois Central and sold. The remaining \$3,312,700 was exchanged by other holders, thus placing with the Illinois Central all but \$7,300 of the \$10,000,000 of stock of the Chicago, St. Louis and New Orleans, of which \$4,422,700 is pledged against the leased line certificates, and \$5,570,000 is the unincumbered property. At least 200 additional

cars are required by the opening of the new coal mines. A branch ten and a-half miles long was constructed from Buckingham, in the middle division, to the Essex coal field. There was expended during 1882 \$108,000 upon the construction of a branch road running to South Chicago. This branch and the extension of the middle division to Bloomington will be open for business early in the spring. Two branch lines connecting with the southern division are under construction. One is from Jackson, Miss., to Yazoo City, forty-eight miles in length. The other is a continuation of the Kosciusko branch from that point to Aberdeen, ninety-seven miles. It is estimated that about \$2,600,000 will be required during 1883 in addition to the money already spent and material provided for these branches.

#### Railroad Legislation in Maine.

IN addition to the information given under its appropriate heading in reference to the incorporation in the State of Maine of certain railroad, telegraph and telephone companies, we learn that the Legislature, at its recent session ratified the contract of May 4, 1881, and all additional contracts between the Eastern, and the Portland, Saco and Portsmouth railroad companies; extended the time for the completion of the Bangor and Piscataquis Railroad to Moosehead Lake to January 27, 1886; authorized the acquirement by the Junction Railroad Company of Portland of the franchises and all the property of the Portland Dry Dock and the right to exercise all the privileges granted that company; authorized the lease of the Kennebunk and Kennebunkport Railroad to the Boston and Maine; granted the Ocean Street Railroad Company the privilege to extend its track into the city of Portland, and their operation as a horse railroad; extended the time for locating and constructing the Maine Shore Line Railroad to February 1, 1887; granted the right for the construction and maintenance of a railroad from Ellsworth to some point on the Eastern Maine Railroad, and the running of its trains over the latter road to connect with trains going West; the extension of the Eastern Maine Railroad from some point on its present line to Mt. Desert was authorized, and the organization of the company from the bonds of the Bangor and Bucksport Railroad Company ratified; the sale or lease of the Knox and Lincoln Railroad and the change and extension of its location at certain points was authorized; also the lease or transfer of the franchise and property of the Old Orchard Junction Railroad, and the change of gauge by the Green Mountain Railroad; the time for the construction of the Penobscot Central and Passadumkeag railroads was extended; the acts of the Bangor and Piscataquis Railroad Company and the city of Bangor was legalized and made valid relative to the extension of that road.

The law relating to railroads was so amended that charter limitations for the completion of a road shall not be construed to affect any portion of a road completed within the prescribed time and the holders of not less than a majority of the scrip or bonds, due and payable more than three years, or on which no interest has



been paid for more than three years, are given the right of commencing a suit against the corporation. Any corporation having organized as a narrow-gauge railroad may hereafter change the same to the standard-gauge on application to the Railroad Commissioners, and a railroad may be built in the same general direction of any other and within ten miles of the same. The law relating to the taxation of railroads was also amended so that horse railroads will hereafter be taxed one-tenth of one per cent when the gross average receipts shall not exceed \$1,000 per mile.

### Locomotive Work.

MR. J. REID, in his inaugural address as president of the Institution of Engineers and Shipbuilders in Scotland, made the following remarks upon the subject of locomotives: "The first engines of the old Garnkirk and Glasgow Railway, which was opened about the year 1829, weighed from eight to nine tons. They had 11-inch cylinders, and wheels of cast iron, four feet in diameter, with a working pressure in the boiler of fifty pounds per square inch. The Garnkirk engine used to take a train of three carriages, weighing seven tons gross, at an average speed of sixteen miles per hour between Glasgow and Gartsherrie. When the old line, eight miles in length, was merged into the Caledonian Railway, now comprising a system of about 879 miles, the power of the engines was greatly increased, and at this day there are express passenger engines working over the same ground having 17-inch and 18-inch cylinders and wheels of seven feet and eight feet in diameter, and weighing, in working order, from thirty-five to forty-five tons. These engines take a gross load of ninety tons at a speed of from forty to fifty miles per hour, burning about twenty-three pounds of coal per mile run."

### The "Traders' Dispatch" Line.

A FAST freight line is to be put on the New York, Lake Erie and Western and the New York, Chicago and St. Louis railroads, and trains will begin running in April between New York and Chicago and intermediate and tributary points. It will be known as the "Traders' Dispatch." The contract has been signed for the New York, Lake Erie and Western by George R. Blanchard, the Vice-President, and for the New York, Chicago and St. Louis by William K. Vanderbilt, the President. Four thousand cars will be put into the service at the outset, an officer of the Erie said, and more will be added as needed. The time and rates will be the same as by other lines. The main points besides New York and Chicago from which freight will be taken will be Boston, Philadelphia, and St. Louis. Among the other roads that will participate in the arrangement will be the Lehigh Valley, the New York and New England, the Fitchburg, the Boston, Hoosac Tunnel and Western, the Delaware and Hudson Canal Company's roads, and the Cincinnati, Hamilton and Dayton. The Erie and Nickel Plate have been exchanging business in a general way since the latter was put in operation.

The Erie has lines over the Grand Trunk of Canada, the Pittsburgh, Fort Wayne and Chicago, and the Pittsburgh, Cincinnati and St. Louis. The Nickel Plate, although a Vanderbilt road, it is understood, will not be used for the business of the New York Central and Hudson River. The control of it was secured in the interest of the Lake Shore and Michigan Southern. The Lake Shore and the Michigan Central transport the business of the New York Central. The Nickel Plate is regarded by the Vanderbilt management as a natural tributary of the Erie and the New York, Lackawanna and Western. The understanding is that it is in a great sense to be reserved for their use and the use of the New York, West Shore and Buffalo when completed. The New York, Lackawanna and Western has already made an arrangement for a fast freight line over it. There has been some talk of a passenger arrangement between the Erie and Nickel Plate. As yet the Nickel Plate has put on no through passenger trains.

### Hours of Work on Railways.

IN reporting to the London Board of Trade on the circumstances of an accident which recently happened at Essendine, on the Great Northern Railway, Major-General Hutchinson describes it as due to an extraordinary mistake on the part of a signalman in moving a lever. He adds:—"He had no motive for the action, and was not in the habit of using the lever. It must, however, be remembered that at the time of the collision he had been on duty for eleven and a half hours, and it is by no means improbable that he had become drowsy, and had unconsciously pulled over and then put back this lever without recollecting what he had done. It is, I am certain, unreasonable to expect signalmen to retain the full use of their powers at the end of twelve hours' nightwork, and I would strongly recommend that in those signal cabins where the work is not sufficiently important to allow of the regular employment of three signalmen, some arrangements should be made for dividing the nightwork into two periods of about six hours each. Any such arrangement would, I know, be unpopular with the signalmen, but I am convinced that it would conduce to the safety of railway traveling."

### Freight Train Brakes.

AN address was delivered before the members of the Master Car-Builders' Club, at their rooms, No. 113 Liberty street, this city, on the 15th inst., by George Westinghouse, Jr., the inventor of the Automatic Brake, on the subject of continuous brakes, especially as applied to freight cars and trains. All the roads having terminal points in this city or its immediate vicinity, and several New England roads, were represented. The necessity of some method of braking a freight train more speedily, safely, and certainly had induced Mr. Westinghouse to make a number of experiments in the automatic and continuous braking of freight trains, which had led him to believe that such a desideratum could be attained and applied to freight

as well as passenger trains. To the perfect success of any such plan, however, it was agreed, in a discussion which followed his remarks, that a uniform style of truck, spread of wheels, system of hanging brake-gear and of application of braking-power and style of brake-shoes was the first requisite. These once agreed upon, and the diverse systems employed and the present shabby system of gearing abandoned, the system so much desired could probably be successfully adopted. If adopted, the improvements to the cars would probably cost not more than \$5 each. To this must be added the cost of an automatic brake, and then railroads will secure a perfectly safe brake which will permit the running of freight trains on express time.

### Weekly News Items.

THE Pennsylvania Railroad Company reports the total length of lines owned, leased and controlled by it east of Pittsburgh and Erie as 3,859.92 miles, of which 406 miles comprise canals and ferries. The company owns 16 lines, consisting of the main line between Philadelphia and Pittsburgh and its direct branches and extensions; and it leases and controls 82 lines. Of the total length of main lines 345.77 miles are owned and 2,255.85 miles are leased and controlled. Of branch lines 88.75 miles are owned and 1,169.55 are leased and controlled. The total length of all the tracks owned, leased and controlled, including sidings, is 5,906.22 miles, of which 4,531.51 miles are main lines and 1,374.71 miles are branch lines. This mileage is located as follows: Pennsylvania, 2,599.17; New Jersey, 644.23; Maryland, 328.39; Delaware, 164.05; New York, 70.50; Virginia, 33.60; West Virginia, 11.80; District of Columbia, 8.18.

THE Railroad Commissioner of Minnesota has prepared a list for the information of the Legislature, of all the elevators in that State, giving their location, capacity and proprietorship. The Commissioner thinks that the Legislature should require elevator companies and proprietors to keep accurate statistics of the grain they handle, its grades, and when shipped, upon blanks to be furnished by his office. This is done in Illinois, and gives great satisfaction, furnishing an inside view of grain operations, and information to the public of the actual amount handled. The inspection and grading of grain does not pertain to the duties of that office. The total storage capacity of the elevators of the State is 13,080,000 bushels.

A STATION indicator of improved device has been patented. The invention consists in rolls, on which webs having the names of the stations and destination marked on them are wound and unwound, so as to expose to view at the proper time the several stations successively, and the ultimate destination of the conveyance. These rolls are actuated automatically by one or more springs, an automatic stop mechanism is used for holding the roll at measured points in its rotation by means of the actuating spring; for the purpose of exposing

each station on the web a gong bell is likewise provided for attracting the attention of the passengers to each change in the indicator.

THE first conductor's punch and the combination ticket date back to the time when the late D. L. Freyre was the ticket agent of the New York Central road. He had issued a ticket from Albany to St. Louis; on the edge were printed the initials of the various roads over which the holder could pass. The conductor was obliged to punch from this ticket the name of his road as the holder passed over it. This style of ticket called into being for the first time the conductor's punch, now used by every conductor. It was also the first attempt at a combination ticket, from which has finally grown the present half-yard long coupon ticket. It was also the reason for the first gathering of General Passenger Agents to consult on methods for managing their business more methodically, which meetings finally grew into the National Association of General Passenger Agents.

AMONG the curious old locomotives sent to Chicago for the Railway Exposition is one from Nova Scotia, which is said to be the second or third built for Stephenson. A brass plate on the boiler bears the inscription: "Timothy Hackworth, Sheldon, Durham, August, 1839." The engineer and fireman are situated one at each end of the boiler, an iron arm-chair being provided each for their convenience, but they have no protection from the weather. The tender is attached to what in modern engines would be the pilot end of the boiler, and the cylinders are situated above the rear driving-wheels.

HAULING dining-cars on express trains, says the *Indianapolis Journal*, has not as yet been profitable to the companies running them, unless they are of some value as an advertising medium. Doubtless the Chicago, Rock Island and Pacific and the Chicago, Burlington and Quincy roads have the finest and best operated dining-car lines in the country, and upon both roads, it is stated officially, these cars have been run at a loss pecuniarily to the company, and general managers are not encouraging this feature of railroading to such an extent as to indicate the introduction of dining-cars generally.

BONDS for the construction of the Pontiac and Pacific Junction Railway have been successfully floated in the English market. The bonds are for \$20,000 per mile and are guaranteed by the Quebec Government. This insures the construction of the entire road between Hull and Pembroke. Work will be commenced immediately upon the disappearance of the snow. Last summer eighteen miles of the road-bed were made, and four miles of steel rails were laid.

THE latest idea in car construction is that suggested by a woman. It is "to fit up a car with different heights of seats, having, say, one-half the space of the coach clear; cover the floor with inexpensive rugs where tired babies may roll and stretch their limbs as on their home carpets." Patent not yet applied for.

## CORRESPONDENCE.

[COMMUNICATIONS are solicited for this department on all subjects pertaining to Railroads, Steam Navigation, Machinery, Manufactures, etc. No attention will be paid to communications unless the name and address of the writer is furnished us, though if desired, they will be withheld from publication. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to this department of the AMERICAN RAILROAD JOURNAL.]

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

THERE was quite a discussion in the House last Thursday on the export duty on spruce logs, and also pulp wood of all kinds. The present export duty on spruce saw logs is \$1 per 1,000 feet, and the Government are asked to still further increase the duty. It is not likely the duty will be imposed for the present, for as the Finance Minister says, "It must be remembered that parties have made contracts under which they have cut logs during the winter for delivering in the spring, and if a duty were imposed, to go into immediate effect, a loss would accrue to them, and it is therefore worthy of consideration, as to how far such a proposition could be made applicable to the operation of the present season. This matter was pressed on the consideration of the Government last Session, with respect to stave bolts and everything of that kind from the Dominion to the other side, which are practically shut out by the high duty imposed there. But the Government will give the matter their most serious consideration, and see how far they would be justified in coming to the House and asking their support to a proposition of this kind. There is a great deal in what has been said by the hon. mover, but there is still the difficulty, which I take the liberty of pointing out, with respect to contracts which may have been made for logs cut during the present season."

During the past three years the importation of manufactured cotton goods fell off from \$6,528,558 in 1879, to \$4,674,548 in 1882, although during that time the importation of raw cotton increased from 9,720,000 pounds to 19,342,000 pounds.

A bill has been introduced in Parliament to make: 1. The legal rate of interest six per cent. 2. Any rate not exceeding six per cent or less may be stipulated and recovered. 3. If more be stipulated or taken, interest to be forfeited. 4. Parties paying excessive interest may recover the whole interest paid. 5. Parties sued under the Act for usury compellable to answer under oath. The bill has passed a second reading, and has a good chance of becoming law.

The Minister of Justice has introduced in the Senate the following bill, amending the Post Office Act, viz:

"To post for transmission or delivery by or through the post any obscene or immoral book, pamphlet, picture, print, engraving, lithograph,

photograph, or other publication matter or thing of an indecent, immoral, seditious, disloyal, scurrilous or libellous character, or any letter upon the outside or envelope of which, or any post card or post band or wrapper upon which there are words, devices, matters or things of the character aforesaid, or any letter or circular concerning an illegal lottery, so-called gift concert, or other similar enterprise offering prizes or concerning schemes devised and intended to deceive and defraud the public for the purpose of obtaining money under false pretences, shall be a misdemeanor."

Sir Leonard Tilley, Finance Minister of Canada, says that while there can be no objection to private bankers doing business as such, the government are of opinion that they should not be permitted to assume the name of a "bank" or "banking house."

On Saturday, Mr. James A. Chipman, flour and commission merchant of Halifax, N. S., was examined by the Committee on Inter-Provincial Trade. He said that industries of the maritime were natural and consisted of fish and their products, coal, iron and its products which Canada could exchange with the West Indies for their sugar, etc. The freight charges on the agricultural products and manufactured goods of the Western Provinces, which entered so largely into Inter-Provincial trade, between Toronto and Halifax was exorbitant. The only way to remedy this evil was by competition in freights, and with this view he suggested placing a line of steamers on the St. Lawrence between Niagara and Point Levis to connect with the Intercolonial, and recommended that the government should grant a subsidy of \$35,000 or \$40,000 for the purpose. Another gentleman, who was examined before the same committee respecting the trade in fish, grain, etc., said there was a large and increasing trade with the Western Provinces in Labrador and Cape Breton herrings and codfish. He did not think the abrogation of the Treaty of Washington would be injurious to Canadian fishermen, on the contrary would secure the home trade to Canadians.

On Wednesday last Mr. E. A. C. Pew and Dr. Schultz completed the sale of their interest in the Manitoba Southwestern to the Minneapolis and St. Paul Railway Company, who had previously purchased the interest of the other parties connected with the company.

Mr. E. A. C. Pew leaves for England early next month to make arrangements for the sale of the lands of the railway company, whose charter is now before Parliament.

Letters patent of incorporation have been granted to the Winnipeg Consolidated Gold Mining Company, the Argyle Mining Company and the Canadian Colonization Company.

Sunday morning a snow storm set in from the west extending over Canada, blocking railways and impeding travel; the storm continues to the present time (Monday night) without signs of abatement.

The Canada Gold Mining Company, with head office at Winnipeg, Manitoba, has been organized at Winnipeg. The mines and works are at Lake of the Woods, and the wonderful gold bearing resources are beyond any doubt. The gentlemen connected with the company are



men of high standing and we predict success for them.

The railway companies of the northwest will plant trees along their tracks, as they consider them the best preventive against snow.

Mr. William Wainwright, assistant general manager of the Grand Trunk Railway was in the city last week on matters connected with his company. Mr. Wainwright is a thorough railwayman and gentleman, and no more energetic or painstaking officer can be found on the staff of any railway.

We regret to hear that Mr. Fitz Cochrane has severed his connection with the Prince Albert Times. Mr. Cochrane has edited the Times since it first went to press and his management has given general satisfaction.

"W."

OTTAWA, March 21, 1883.

### Cruelty to Baggage-Men.

EDITOR AMERICAN RAILROAD JOURNAL.

As you have always been ready to correct abuses, I would like to lay a subject before you, of great importance to those directly concerned. We have societies to stop cruelty to children, and another, cruelty to animals, which are governed by State laws, but we need another to protect a large class of hard working men, called baggage men on our railroads, and should be governed by State laws.

I have been traveling for thirty-six years, and the imposition practiced upon these men is perfectly abominable. This consists in obliging them to handle such weighty baggage. It may be said that the commercial traveler pays extra baggage. Let us see. Suppose a baggage man can lift 200 pounds, which he puts in the car, immediately another man appears with a trunk of 500 pounds, and by paying extra baggage, enables the man who could, by the greatest exertion, lift 200 pounds to now lift 500 pounds. It is a good lift for one man to lift 150 pounds as high as a baggage car, and the number of men on the roads as baggage-men who are ruptured or have become disabled by a strain on the spine is incredible. I saw a man moving one of those trunks in Utica who ruptured himself and died in ten days.

I was on the road a few weeks since, when one of these heavy trunks was put in a car, and the man in putting it in place strained himself and fell dead.

Let these men have trunks not weighing more than 200 pounds, and be fined five dollars if they offer a heavier one, the baggage men to collect it and keep it.

These men are disabled and then they are told, if you cannot do the work we must get someone else. A man injured in the spine is generally injured for life. A corporation has no right to set so little value on the lives and health of its employes.

I suppose Mr. W. H. Vanderbilt might lift 150 pounds or even a barrel of flour which weighs 200, but I doubt it, and yet he calls on the average man to lift double this. It may be said that they have two or more men to do this. That may be at large cities, but not at most stations; and I hope we may have some man in Congress who will have human kindness

enough in his nature to get a law passed that 200 pound packages and no more shall a baggage man be required to lift, but a man may carry a trunk weighing 1,000 pounds if he will put it in the car himself. Please let all our papers in the country copy this.

A. A. STARR.

WESTFIELD, N. J., March, 1883.

## NEW YORK AND NEW ENGLAND RAILROAD.

### Resumption of the Favorite Transfer Steamer Maryland Route.

THROUGH PULLMAN CARS FOR

PHILADELPHIA, BALTIMORE AND WASHINGTON,

WITHOUT CHANGE: connecting with through trains to Florida and all points South and West. Train leaves Boston at 6:30 P. M. daily.

Leave Boston for Grand Central Depot, New York, at 9 A. M.; returning, leave New York at 11 A. M. and 11:34 P. M., week days. Pullman Palace Cars run through.

## THE NORWICH LINE

—BETWEEN—

### BOSTON AND NEW YORK.

Steamboat train leaves Boston 6:30 P. M. arrives at New London at 10:00 P. M., connecting with the new steamer City of Worcester, Monday, Wednesdays and Fridays, and City of New York, Tuesdays, Thursdays and Saturdays. Returning, steamer leaves Pier 40, North River, New York, at 4:30 P. M., connecting at New London with train leaving at 4:05 A. M., arriving in Boston at 7:55 A. M. Good night's rest on the boat.

### Ask for Tickets via N. Y. & N. E. R. R.

Office 322 Washington st., Depot foot Summer st., Boston.

S. M. FELTON, JR.,  
Gen'l Manager.

A. C. KENDALL,  
Gen'l Pass. Agent.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs**, as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,  
General Manager.

A. V. H. CARPENTER,  
Gen. Pass. and Tick. Agt.

J. T. CLARK,  
General Sup't.

GEO. H. HEAFFORD,  
Ass't Gen. Pass. Agt.

## HOUSATONIC RAILROAD.

THE ONLY LINE RUNNING

### THROUGH CARS

Between New York, Great Barrington, Stockbridge, Lenox, and Pittsfield—the far-famed resorts of the

### Berkshire Hills

of Western Massachusetts—the "Switzerland of America."

Two through trains daily between New York City and all points on the Housatonic Railroad, from the Grand Central Depot via the New York, New Haven, and Hartford Railroad at 10 A. M. and 3:30 P. M.

Descriptive Guide-Book sent free by mail upon application to the General Ticket Agent.

H. D. AVERILL, Gen'l Ticket Agent.

W. H. YEOMANS, Superintendent.

General Offices Bridgeport, Ct. Dec. 27, 1882.

## "Progressive and Reliable."

"Under its present management,

## THE ERIE RAILWAY

is become the most progressive and reliable Trunk Line in America."—Cleveland Leader.

## THE ERIE

is the **SAFE and COMFORTABLE** Line between the East and West. Its equipment is unsurpassed—Pullman Coaches, Westinghouse Air-Brake, Miller Safety Platform, Cars Lighted by Gas, Steel Rails, Double Track.

The scenery along the line includes such great Works of Nature as **Niagara Falls, Watkin's Glen, Portage Falls and Gorge, the Great Lakes** and the **Lakes of Central and Western New York**, making it truly the "LANDSCAPE ROUTE OF AMERICA."

E. S. BOWEN, Gen. Supt., N. Y.

JNO. N. ABBOTT, Gen'l Pass'r. Agt., N. Y.

# ERIE RAILWAY, now known as the NEW YORK, LAKE ERIE AND WESTERN RAILROAD.

Arrangement of trains from Chambers street depot.

9 a. m.—Cincinnati and Chicago Day Express. Drawing room Coaches to Buffalo and Suspension Bridge.

6 p. m. (Daily)—Fast St. Louis Express, arriving at Buffalo at 8 a. m., connecting with fast trains to the West and Southwest. Pullman's best Drawing-room Sleeping Coaches to Buffalo.

7 p. m. (Daily)—Pacific Express for the West. Sleeping Coaches through to Buffalo, Niagara Falls, Cincinnati and Chicago without change. Hotel coaches through to Chicago.

7:15 p. m.—Emigrant train for the West.

Rutherford and Passaic, 6, 7:20, 7:50, 9:30, 10:20 a. m., 12 noon, 1:45, 3, 3:50, 4:40, 5:10, 5:30, 6:10, 6:30, 8, 10:30 p. m., 12 midnight. Sundays, 6, 8:30, 10:20 a. m., 1:45, 6:30 p. m., 12 midnight.

Paterson, 6, 7:20, 7:50, 9:30, 10:20 a. m., 12 noon, 1:45, 3, 3:50, 4:40, 5, 5:10, 5:30, 6:10, 6:30, 7:25, 8, 10:30 p. m. and 12 midnight. Sundays, 6, 8:30, 10:20 a. m., 1:45, 6:30 12 midnight.

Newark and Paterson via Newark. 6:45, 8:40, 11:30 a. m., 3:10, 4:20, 5:20, 6:10, 7:30 p. m., and 12 midnight Saturday nights only. Sundays, 9:15 a. m., 3:10, 6:30 p. m.

Suffern, 6, 7:50, 10:20 a. m., 1:45, 3:50, 5, 6:10, 7:15 p. m., and 12 midnight. Sundays, 6, 8:30, 10:20 a. m., 1:45, 6:30 p. m. and 12 midnight.

Warwick, 7:50 a. m., 4:30 p. m.

Newburg and Cornwall, 7:50, 9 a. m., 3:30, 4:30 p. m. Sunday, 8:30 a. m.

Rondout and Kingston, 9 a. m., 3:30 p. m. Sunday, 8:30 a. m.

Goshen, 6, 7:50, 9, 10:20 a. m., 3:30, 3:50, 4:30, 7, 7:15 p. m. Sunday, 6, 8:30, 10:20 a. m., 6:30, 7 p. m.

Middletown, 6, 7:50, 9, 10:20 a. m., 3:50, 4:30, 7, 7:15 p. m. Sunday, 6, 8:30, 10:20 p. m., 6:30, 7 p. m. The 9 a. m. and 4:30 p. m. trains connect with Midland Railroad at Main street.

Port Jervis, 7:50, 9, 10:20 a. m., 4:30, 6, 7, 7:15 p. m. Sunday, 8:30, 10:20 a. m., 6, 6:30 and 7 p. m.

Boats leave 23d street quarter of and quarter after each hour from 5:45 a. m. to 9:45 p. m. and at 10:45 and 11:45 p. m.

Tickets for passage and for apartments in drawing-room and Sleeping coaches can be obtained and orders for the checking and transfer of baggage may be left at the Company's Offices, Nos. 261, 401 or 957 Broadway, 187 West street, New York, No. 2 Court street, Brooklyn; or at the Company's Depots.

Emigrant Agency, No. 5 Battery Place.

Express trains from the West arrive in New York at 7:25 and 11:25 a. m. and 10:10 p. m.

JNO. N. ABBOTT, Gen'l Pass'r Agent, New York.

## NEW YORK CENTRAL AND HUDSON RIVER RAILROAD—Commencing November 6, 1882, through trains will leave Grand Central Depot:

8 a. m., Western and Northern Express to Rochester and Montreal with drawing-room cars: also to Saratoga.

8:40 a. m., Special Express for Chicago, daily, stopping only at Albany, Syracuse, Rochester, Buffalo, Erie, Cleveland and Toledo.

10:30 a. m. Chicago Express, drawing-room cars to Canandaigua, Rochester and Buffalo.

11 a. m., to Albany and Troy, with connection to Utica Saratoga, Glens Falls, Lake George and Rutland.

3:30 p. m., Albany and Troy special, Saturdays only.

4 p. m., Accommodation to Albany and Troy.

6 p. m., St. Louis Express, with sleeping cars for St. Louis; running through every day in the week, also Niagara Falls, Buffalo, Toledo and Detroit.

6:30 p. m., Express daily except Sunday, with sleeping cars to Syracuse and to Auburn Road, also to Saratoga and Montreal.

9 p. m., Pacific Express, daily, with sleeping-cars for Rochester, Buffalo, Cleveland, Toledo, Detroit, Chicago and Lowville.

11 p. m., Night Express, with sleeping-cars to Albany and Troy. Connects with morning trains for the West and North.

Tickets on sale at No. 5 Bowling Green, 252 and 413 Broadway, and at Westcott's Express Offices, 3 Park Place and 785 and 942 Broadway, New York, and 333 Washington street, Brooklyn.

C. B. MEEKER,  
Gen. Passenger Agent.  
J. M. TOUCEY, Gen. Sup't.

# NO OTHER LINE IS SUPERIOR TO THE FITCHBURG RAILROAD HOOSAC TUNNEL ROUTE WEST.

## 8.30 A. DAY EXPRESS.

Wagner Palace Drawing-Room Cars Attached.

Running through to Syracuse, N.Y., where connection is made with through sleeping-cars for Cincinnati, Cleveland, Toledo, **DETROIT AND CHICAGO.**

## 3.00 P. CINCINNATI EXPRESS.

Pullman Sleeping Car attached, running through to Cincinnati without change. (Only Line running Pullman Cars from Boston.) This car runs *via* Erie Railway and N.Y., P. & O. R.R., making direct connection for Louisville, St. Louis, Kansas City, New Orleans, and all points in Texas and New Mexico.

## 3.00 P. ST. LOUIS EXPRESS.

THE ONLY LINE which runs a THROUGH SLEEPING-CAR from

## BOSTON TO ST. LOUIS WITHOUT CHANGE!

ARRIVING AT 8.00 A.M. SECOND MORNING.

Through sleeping car for Buffalo, Toledo, Fort Wayne, Logansport, Lafayette, Danville Tolono, Decatur and St. Louis, making direct connection with through Express Trains for Kansas, Colorado, Texas, and all points in the

## SOUTHWEST.

## 6.00 P. PACIFIC EXPRESS.

The only line running a through sleeping-car *via* Niagara Falls, Canada Southern Railway and Detroit without change, arriving at Chicago at 8.00 A.M. second morning, making sure connections with through Express Trains for Iowa, Nebraska, Kansas, Colorado, the Pacific Coast, Wisconsin, Minnesota and all points in the

## WEST AND NORTHWEST.

THE ABOVE TRAINS RUN DAILY, SUNDAYS EXCEPTED.

This Great Short Line passes through the most celebrated scenery in the country, including the famous HOOSAC TUNNEL, four and three-quarters miles long, being the longest Tunnel in America, and the third longest in the world.

Tickets, Drawing-Room and Sleeping-Car Accommodations may be secured in Advance by Applying to or Addressing

250 WASHINGTON STREET, BOSTON. 250

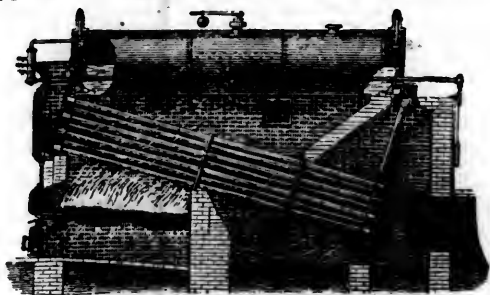
JOHN ADAMS, General Superintendent. F. O. HEALD, Acting Gen'l Passenger and Ticket Agent.

In effect October 23d, 1882, and subject to changes.



## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	246,062	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,658	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,306	230,222	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	606,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,779,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,735	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,679,455	1,679,455	2,083,803	1,883,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,560,597	1,854,269	17,025,969
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,380,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	332,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,502	383,202	355,586	373,370	379,029	392,921	342,015	3,981,297
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,790	4,973,056
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	221,320	211,014	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,950	2,045,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	624,728	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	620,728	6,349,057
<b>HAMMILL AND ST. JOSEPH:</b>													
1880.....	176,079	166,065	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,563	249,252	239,891	2,303,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	763,475	8,580,397
1882.....	746,744	697,274	686,228	660,014	674,749	663,746	752,251	813,600	828,238	865,325	732,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	102,085	203,677	200,064	199,840	199,125	272,114	247,132	225,678	200,450	192,622	2,487,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,113	206,072	278,814	273,110	269,046	256,998	205,212	2,641,675
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,746	1,277,885	817,135	786,192	951,566	1,002,950	955,223	1,153,779	11,341,779
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,368	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,212	2,403,224
1882.....	159,676	158,590	148,166	141,957	134,378	135,184	135,174	137,475	207,433	207,433	295,110	307,043	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	188,339	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,943
1882.....	156,994	159,981	161,005	154,155	135,556	119,074	160,991	168,304	108,999	180,319	181,336	261,082	3,408,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	240,512	280,524	299,573	261,200	240,764	240,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,790,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,409	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	487,273	465,588	487,287	440,811	468,008	429,565	449,664	487,160	476,622	5,443,997
1882.....	407,368	413,551	430,194	435,129	482,607	482,752	503,053	667,488	592,435	550,225	526,685	490,003	5,880,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,300	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,231								

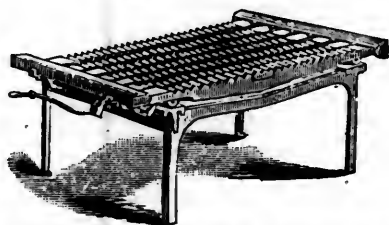
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**Practical Shaking Grate Bar,**

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The W. Ryder Double-Acting Grate Bars are so constructed as to rest upon a frame with friction rollers, and by means of a lever attached to the front rocking bar, a reverse or reciprocal motion is produced in each bar which effectually breaks up the clinkers, and removes all the ashes from the bottom of the furnace.

By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop its working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.



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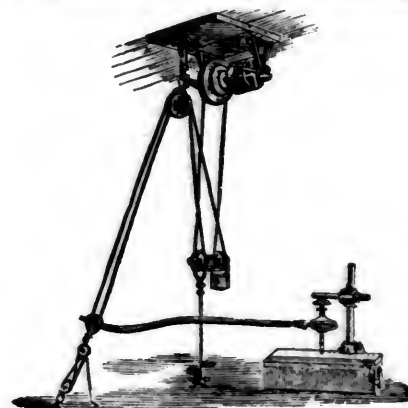
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## RAILROAD, TRAMWAY AND CANAL DIVIDEND STATEMENT.

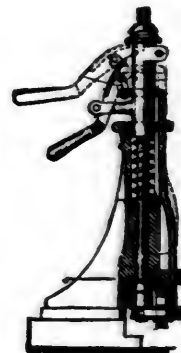
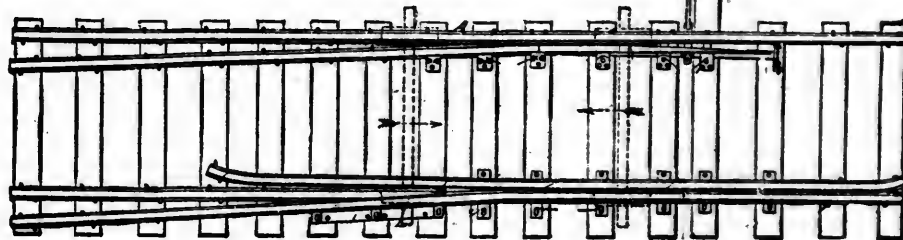
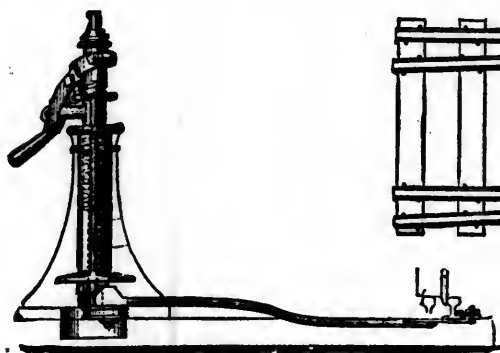
Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami..... 50	4,637,300	q'arterly	Mar. '83 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3
Atch., Top. and S. Fe...100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S...100	4,090,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point...100	1,232,200	semi-an	Feb. '83 6	Little Schuylkill*... 50	2,646,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*100	5,840,000	semi-an	Mar. '83 3	Long Island..... 50	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil. pref.100	821,300	semi-an.	July '80 2
Augusta and Savan*100	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv...100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Mar. '83 3 1/2
Avon, Genesee & M*100	225,000	semi-an	Jan. '82 3	Lowell & Andover...100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington & Weld'n.100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio...100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Jan. '83 2 1/2	Wil., Col., & Ang.....100	960,000	semi-an.	Jan. '83 3
" " pref.100	5,000,000	semi-an	Jan. '83 3	Maine Central.....100	3,603,300	semi-an.	Feb. '83 2 1/2	Winchester & Poto*c.100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	Manchester & Law... 100	1,000,000	semi-an.	Nov. '82 5	Winchester & Straab.*100	74,700	semi-an.	Jan. '83 3
Berkshire*.....100	600,000	q'arterly	Apr. '82 1 1/2	Manhattan..... 100	13,000,000	.....	.....	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany...100	20,000,000	q'arterly	Mar. '83 2	" " 1st pref.100	6,500,000	q'arterly	Apr. '83 1 1/2	TRAMWAYS.			
Bos. & N. Y. Air Line pf.100	2,795,227	q'arterly	June '82 1	" " 2d pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos., Cl., F. & N. B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	Marq. Hout. & Ont.....100	2,306,600	.....	Feb. '83 4	Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Bos., Conc. & Mont. pf.100	800,000	semi-an	Nov. '82 3	" " pref.100	2,259,026	semi-an.	Feb. '83 4	Balt., Cat. & El. Milla. 100	8,000	semi-an.	Jan. '82 1/2
Boston and Lowell...100	3,040,000	semi-an	Jan. '83 2 1/2	Massawippi*.....100	400,000	semi-an.	Feb. '83 3	Bleeker St. & Ful. R'y.100	900,000	semi-an.	July '82 2
Boston and Maine...100	6,921,274	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Boston & Providence...100	4,000,000	semi-an	Nov. '82 4	Michigan Central...100	18,738,204	.....	Feb. '83 2	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
Attleborough Br.....100	131,700	semi-an	Jan. '83 3 1/2	Middlesex Central...100	280,000	semi-an.	Feb. '83 3	B'way & 7th Av. (N. Y.)100	2,100,000	q'arterly	Oct. '82 2
Bos., Revere & Lynn...100	419,400	semi-an	Jan. '83 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 5	B'klyn & Hunter's Pt.100	400,000	semi-an.	Oct. '82 6
Buffalo, N. Y. & Erie*100	950,000	semi-an	Dec. '82 3	M. Hill & Schuyl. Hav* 50	4,022,500	semi-an.	Jan. '83 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Buff., N. Y. Phila. pref. 50	6,000,000	q'arterly	Mar. '83 1 1/2	Missouri Pacific.....100	28,169,800	q'arterly	Apr. '83 1 1/2	Bushwick (Brooklyn)100	309,000	semi-an.	Oct. '82 6
Camden & Atlantic... 50	377,400	q'arterly	Nov. '82 3	Mobile & Montgomery100	3,022,517	semi-an.	Feb. '80 2 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
" " pref. 50	880,650	q'arterly	Nov. '82 4	Morris & Essex..... 50	15,000,000	semi-an.	Jan. '83 3 1/2	Cen. Park, N. & E. Riv.100	1,800,000	q'arterly	Oct. '82 6
Camden & Burl. Co.100	381,925	semi-an	Jan. '83 3	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Jan. '83 6	Christoph'r & Tenth St.100	650,000	semi-an.	Aug. '82 2 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Nashua and Lowell...100	800,000	semi-an.	Nov. '82 4	Citizens' (Phila.)..... 50	192,500	q'arterly	Jan. '82 2 1/2
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua & Rochester.100	1,305,800	semi-an.	Oct. '82 1 1/2	Citizens' (Pbg.)..... 50	200,000	annual	.....'80 14 1/2
Catawissa*..... 50	1,159,500	annual	Oct. '82 2 1/2	Nashv. & Decatur...100	1,827,000	semi-an.	Dec. '82 3	Coney Island & Bklyn100	500,000	semi-an.	Oct. '80 5
" " pref. 50	2,200,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2	Continental (Phila.)... 50	580,000	semi-an.	Jan. '83 6
" " new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Naugatuck.....100	2,000,000	semi-an.	Jan. '83 5	D. Dock, E. B'way & Bat.100	1,200,000	q'arterly	Aug. '82 4
Cayuga and Susq*... 50	589,110	semi-an	Jan. '83 4 1/2	Nesquehoning Val'y* 50	1,300,000	semi-an.	Mar. '83 3	Eighth Av. (N. Y.)...100	1,000,000	q'arterly	Oct. '82 3
Cedar Rapids & Mo. R*100	6,850,400	q'arterly	Feb. '83 1 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Jan. '83 —	42d St. & G. St. Ferry100	747,000	semi-an.	May '82 6
" " pref.100	769,600	semi-an	Feb. '83 3 1/2	New London North*100	1,500,000	q'arterly	Jan. '83 1 1/2	Frank. & Southw (Ph) 50	600,000	q'arterly	Oct. '82 6
Central of Georgia...100	7,500,000	semi-an	Dec. '82 4	N. Y. Cen. & Hud. R.100	89,428,330	q'arterly	Apr. '83 2	Germantown, (Ph.)... 50	1,546,902	q'arterly	Jan. '83 2 1/2
Central of New Jersey100	18,563,200	q'arterly	July '76 2 1/2	N. Y. and Harlem.....100	7,950,000	q'arterly	Jan. '83 4	Girard College (Ph.)... 50	500,000	semi-an.	July '71 3
Central Ohio*..... 50	2,437,950	semi-an	Jan. '83 3	" " pref.100	1,500,000	q'arterly	Jan. '83 4	Grand St. & Newton.100	170,000	q'arterly	July '81 2 1/2
" " pref. 50	411,550	semi-an	Jan. '83 3	" " City Line... —	10,000,000	q'arterly	Jan. '83 1 1/2	Green & Coates St. (Ph) 50	708,650	q'arterly	Jan. '83 3
Central Pacific.....100	59,275,500	semi-an	Jan. '83 1 1/2	N. Y., Lack. & West...100	77,087,600	.....	.....	Heston, Mantau & F'm 50	299,381	semi-an.	Jan. '75 4
Cheshire preferred...100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West.100	7,987,500	annual	Jan. '83 6	Highland.....100	600,000	semi-an.	Jan. '83 4
Chicago and Alton.....100	11,811,741	semi-an	Mar. '83 4	" " pref.100	15,500,000	semi-an.	Jan. '83 5	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
" " pref.100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart...100	2,000,000	.....	Mar. '83 12	Lynn and Boston.....100	200,000	semi-an.	Nov. '82 4
Chi., Burl. & Quincy...100	69,508,105	q'arterly	Mar. '83 2	N. Y., Ont. & West...100	3,000,000	q'arterly	Feb. '83 2	Malden and Melrose...100	165,000	.....	.....
Chi., Iowa & Nebras*100	3,916,200	semi-an	Jan. '83 4	N. Y., Prov. & Boston100	3,000,000	semi-an.	Oct. '82 3	Metropolitan (Bost.)... 50	1,500,000	semi-an.	Jan. '83 4
Chi., Mil. & St. Paul.100	20,404,261	semi-an	Apr. '83 3 1/2	Niag. Bridge & Canad*100	1,000,000	semi-an.	Mar. '83 3	Middlesex (Boston)...100	650,000	semi-an.	Nov. '82 2 1/2
" " pref.100	14,401,483	semi-an	Apr. '83 3 1/2	North Carolina*.....100	1,000,000	semi-an.	Mar. '83 3	N. Y., Bay Ridge & Jam.100	150,000	.....	Oct. '78 7
Chi. & N. Western.....100	14,988,257	q'arterly	Mar. '83 2	" " pref.100	1,000,000	q'arterly	Dec. '82 1	Ninth Av. (N. Y.)...100	797,320	.....	.....
" " pref.100	21,535,353	q'arterly	Mar. '83 2	Norfolk & Western pref. 50	15,000,000	q'arterly	Feb. '83 1 1/2	Orange & Newark.....100	282,555	.....	.....
Chi., R. I. & Pacific...100	41,960,000	semi-an	Feb. '83 1 1/2	North Pennsylvania... 50	4,527,150	semi-an.	Jan. '83 4	People's (Phila.) pref. 25	115,250	.....	July '82 2
Chi. and West Mich...100	6,151,000	semi-an	Feb. '83 3	Northern Central.... 50	6,142,000	semi-an.	Dec. '82 3	Philadelphia City... 50	475,000	semi-an.	July '82 4
Chi. St. P., M. & O. pref.100	10,390,000	q'arterly	Apr. '83 1 1/2	Northern N. Hampsh...100	3,068,400	semi-an.	Dec. '82 3	Phila. and Darby..... 50	200,000	semi-an.	July '81 3 1/2
Chi., Ham. & Dayton...100	3,500,000	semi-an	Jan. '83 3	Northern Pacific pref.100	41,099,132	.....	Jan. '83 11 1/2	Phila. & Grey's Ferry... 50	308,000	semi-an.	Jan. '81 1
C. Ind., St. L. & Chi...100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	semi-an.	Jan. '83 5	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Oregon & Transcont'l.100	40,000,000	q'arterly	Apr. '83 1 1/2	Ridge Avenue (Ph.)... 50	420,000	semi-an.	Oct. '81 1 1/2
Clev. Col., Cin. & Ind.100	14,991,800	.....	Feb. '83 2	Old Colony.....100	7,333,800	semi-an.	Jan. '83 3 1/2	Second Avenue (N. Y.)100	1,199,500	semi-an.	July '82 4
Clev. and Pittsburg* 50	11,244,336	q'arterly	Mar. '83 1 1/2	Oregon Improv. Co.....100	5,000,000	semi-an.	Mar. '83 3 1/2	Second & Third St. (Ph) 50	771,071	q'arterly	Jan. '83 4
Columbus & Xenia*... 50	1,786,200	q'arterly	Mar. '83 2	Oregon R'way & Nav...100	13,000,000	q'arterly	Feb. '83 2 1/2	17th & 19th sts (Ph.)... 50	250,000	semi-an.	July '81 3
Col. Hock. Val. & Tol...100	10,316,500	.....	Jan. '83 2 1/2	Oswego & Syracuse...100	1,320,400	semi-an.	Feb. '83 4 1/2	Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82 5
Concord.....100	1,500,000	semi-an	Nov. '82 5	Panama.....100	7,000,000	semi-an.	Jan. '83 6 1/2	Somerville (Boston)...100	193,000	semi-an.	Nov. '82 3
Concord and Ports.*100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Hudson*100	630,000	semi-an.	Jan. '83 4 1/2	South Boston.....100	600,000	semi-an.	Jan. '82 4
Conn. & Passump. Riv.100	2,244,400	semi-an	Feb. '83 3	Paterson & Ramapo...100	248,000	semi-an.	July '82 4	Third Avenue, N. Y...100	2,000,000	q'arterly	Aug. '82 5
Connecticut River...100	2,100,000	semi-an	Jan. '83 4	Pemb. & Hight*..... 50	342,150	semi-an.	Jan. '83 3	13th and 15th sts. Ph 50	334,525	q'arterly	Jan. '83 4
Cumberland Valley... 50	1,202,950	q'arterly	Apr. '83 2 1/2	Pennsylvania..... 50	83,786,570	semi-an.	Nov. '82 4 1/2	23d street, N. Y.....100	600,000	semi-an.	Aug. '82 4
" " 1st pref. 50	241,900	semi-an	Apr. '83 4	Pennsylvania Co..... 50	20,000,000	annual	Dec. '82 4	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
" " 2d pref. 50	243,000	semi-an	Apr. '83 4	Peoria & Bureau Val*100	1,200,000	semi-an.	Feb. '83 4	Union, Phila.....100	1,005,000	semi-an.	Jan. '82 7
Danbury & Norwalk... 50	600,000	.....	Oct. '82 2 1/2	Philadelphia & Erie* 50	7,013,700	semi-an.	.....	West Philadelphia... 50	750,000	semi-an.	July '77 10
Dayton and Mich*... 50	2,402,573	semi-an	Apr. '83 1 1/2	" " pf. 50	2,400,000	semi-an.	Jan. '75 4	CANALS.			
" " pref. 50	1,211,250	q'arterly	Jan. '83 2	Phil. Ger. & Norrist* 50	2,231,900	q'arterly	Dec. '83 3	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3	Phil. and Reading..... 50	32,726,375	q'arterly	Jan. '76 2 1/2	Delaware Division... 50	1,633,351	semi-an.	Feb. '82 2
Del. & Bound Brook*100	1,652,000	q'arterly	Feb. '83 1 1/2	" " pref. 50	1,551,800	q'arterly	July '76 3 1/2	Delaware & Hudson100	20,000,000	q'arterly	Mar. '81 1 1/2
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Phila. and Trenton...100	1,250,100	q'arterly	Jan. '83 2 1/2	Delaware & Raritan*100	5,847,400	q'arterly	Jan. '82 2 1/2
Denver & Rio Grande...100	29,160,000	q'arterly	Jan. '82 1 1/2	Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4	Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82 2
Detroit, Lans. & Nor.100	1,825,600	semi-an	Feb. '83 3	Pittab. Ft. W. & Chi*100	19,714,285	q'arterly	Jan. '83 1 1/2	Monongahela Nav... 50	1,004,500	semi-an.	Jan. '82 3
" " pref.100	2,503,380	semi-an	Feb. '83 3 1/2	" " Special Imp.100	6,770,900	q'arterly	Jan. '83 1 1/2	Morris, consolidated.100	1,025,000	semi-an.	Feb. '83 2
Dubuque & Sioux C'y*100	5,000,000	semi-an	Apr. '83 3	Pittsfield & N. Adams.100	450,000	semi-an.	Jan. '82 2 1/2	" " preferred.....100	1,175,000	semi-an.	Feb. '83 5
East Pennsylvania*... 50	1,709,550	semi-an	Jan. '83	Portl., Saco & Portsmouth100	1,500,000	semi-an.	Jan. '83 3	Pennsylvania..... 50	4,501,200	.....	.....
East Mahanoy*..... 50	392,950	semi-an	Jan. '83	Providence & Worcester100	2,000,000	semi-an.	Jan. '83 3	Schuyl. Nav., com.* 50	859,100	annual.	Oct. '82 500
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 3 1/2	Rensselaer & Saratog*100	7,000,000	semi-an.	Jan. '83 4	" " pref. 50	3,200,000	annual.	Oct. '82 1 1/2
Eel River.....100	3,000,000	q'arterly	Mar. '83 1 1/2	Richmond & Danv...100	5,000,000	q'arterly	Aug. '82 2	MISCELLANEOUS.			
Elmira & Williamst* 50	500,000	semi-an	Nov. '82 1 1/2	Richmond & Petersb.100	1,009,300	semi-an.	Aug. '82 2	Adams Express.....100	12,000,000	q'arterly	Dec. '82 2
" " pref. 50	500,000	semi-an	Jan. '83 3 1/2	Roch. & Genesee Val*100	555,200	semi-an.	Jan. '83 3	American Express... 50	18,000,000	semi-an.	Jan. '83 3
Erie and Pittsburg*... 50	1,99										

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MANUFACTURERS OF

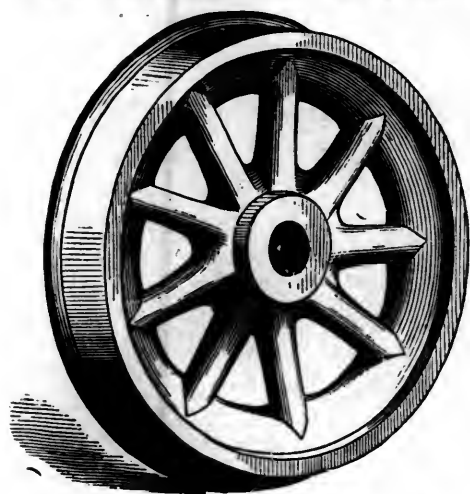
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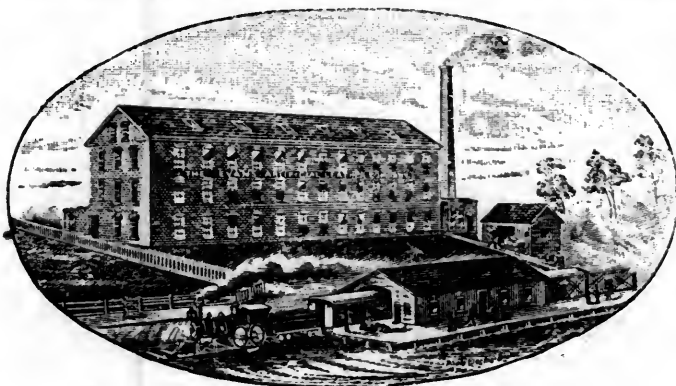


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## Continuous Automatic FREIGHT BRAKES.

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**SIMPLE, DURABLE, AND EFFICIENT.**

Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

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Locomotives—Two Second-hand Narrow-Gauge Engines in good order.  
One Second-hand "Tank" Narrow-Gauge Engine, 10 tons.  
Several Second-hand Standard-Gauge Locomotives in good order, immediate delivery.  
One new 3ft. Gauge Passenger Engine, 22 tons, prompt delivery.  
Six new 4ft. 8½ Gauge Locomotives, cylinders 17x24 weight 35 tons. November and December delivery.  
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Cars—Passenger and Freight Cars of all descriptions for early delivery.  
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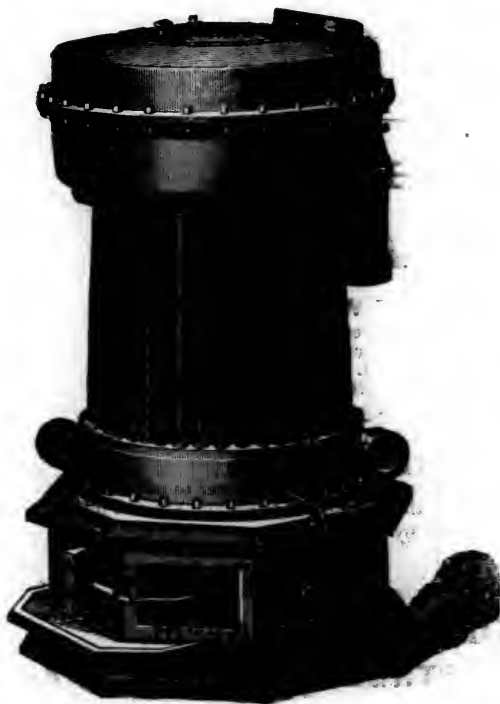
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Manufacturers of Fine

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"36 per cent of coal saved and the car kept noticeably warmer!"

by using THE SALMON CAR HEATER.

It Insures Safety from Fire in case of Accident,

Economy in Fuel and RAPID CIRCULA-

TION. It heats quickly, is SELF-REGULA-

TING, and can be used for

either STEAM OR HOT WATER.

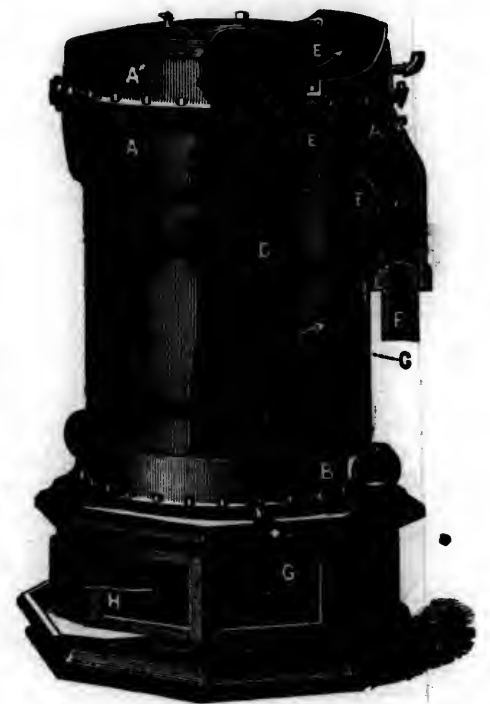
The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low State of combustion without danger of chilling the fire.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

CORRESPONDENCE SOLICITED.

**The Salmon Heater Co.**

OFFICE, 48 CONGRESS STREET, BOSTON, MASS.



## FINANCIAL DEPARTMENT.

## FINANCIAL REVIEW.

WEDNESDAY EVENING, MARCH 21, 1883.

DURING the forenoon, and down to 12:30 o'clock, the rates for call loans on stocks were 15, 12, 16, and 15 per cent; after 12:30 the rates were 15, 14 and 15 per cent, successively; in the last hour, however, the rate declined to 6 per cent.

The posted rates for foreign exchange were 4.81½ and 4.84. The actual rates were as follows, viz: Sixty days, 4.80½@¾; demand, 4.82¾@4.83½; cables, 4.83½@¾; commercial bills, 4.78½@4.79. Continental bills were as follows: Francs, 5.24¾@5.23¾ and 5.21¾@5.21¼; Reichsmarcks, 94@¼ and 94½@¾; Guilders, 39¾ and 40.

In pursuance of the act of Congress in relation to the Japanese Indemnity Fund, approved February 22, 1883, the Secretary of State has transferred to the Secretary of the Treasury the Japanese Fund bonds held by the Department of State, as follows: Four per cent consols, \$1,418,850; three and one-half per cent bonds, \$368,100; three per cents of 1882, \$47,650, together with a check of the disbursing agent of the State Department for the uninvested cash balance of \$3,223.78—total, \$1,837,823.78. This makes up the entire amount of the invested fund known at the "Japanese Indemnity Fund." These bonds will be redeemed and cancelled, and the proceeds covered into the Treasury. This will enable the Department to carry into effect the provisions of the act of February 22, 1883, by honoring a warrant from the Secretary of State for \$785,000.87 for the purpose of delivering the same to the Government of Japan. The distribution of the Wyoming prize money is left by the act within the exclusive jurisdiction of the Secretary of the Treasury.

The gross earnings of the Pittsburgh, Cincinnati and St. Louis Railway for the year ending December 31, 1882, were \$4,214,923.08, the expenses \$2,830,999.80, and the net earnings \$1,383,923.28; interest on investments and rent of equipments, \$19,636.91, total net revenue, \$1,403,559.89; from which deduct interest on funded debt, \$851,990; interest on car trusts, \$143,541.25; other charges to income, \$129,444; leaving a profit of \$278,854.64, on the Pittsburgh, Cincinnati and St. Louis Railway proper. Deducting the loss on the leased lines, \$271,176.76, leaves a net profit on all the lines of \$7,407.88, against a loss in the previous year of \$258,783.77. The earnings of the Columbus, Chicago and Indiana Central Railway were \$5,122,943.11, the expenses \$4,419,358.59, and the net earnings \$703,584.42.

The final meeting of the bondholders of the Columbus, Chicago and Indiana Central Railway Company, was held at the Union Trust Company building on the 20th inst., at which the action of the Purchasing Committee in buying in the road at the recent sale at Columbus was approved and the meeting adjourned sine die. The road is to be reorganized as the Chicago, St. Louis and Pittsburgh Railroad, but it

will remain as a part of the system of the Pennsylvania Company. The new company will have preferred stock amounting to \$20,000,000 and common stock amounting to \$10,000,000. The bonded indebtedness will consist of \$22,000,000 first mortgage 5 per cent bonds to run fifty years.

The forty-sixth report of George M. Dallas, the master under the receivership of the Philadelphia and Reading Railroad and Coal and Iron Companies, involving the accounts of the receivers for January, 1883, was filed in the office of the Clerk of the United States Circuit Court, at Philadelphia, on the 19th inst. The account of the railroad company showed a balance of \$7,189.35 on hand February 1, the receipts during the month having been \$3,179,387.12, including a balance at the beginning of the month of \$431,819.14. The balance on hand on account of deferred income bonds February 1 was \$12,034.69. The balance in the treasury of the Coal and Iron Company February 1 was \$1,047.32, the receipts during the month having been \$1,104,423.66, including a balance of \$5,685.12, carried over from the previous month.

The gross traffic receipts of the Illinois Central Railroad for the year ending December 31, 1882, were \$8,905,312.18, the expenses \$5,244,543.03, and the net receipts \$3,660,769.15; for the year ending December 31, 1881, the gross receipts were \$8,586,397.44, the expenses \$5,359,215.70, and the net earnings \$3,227,181.74—showing an increase in gross receipts of \$318,914.74, with a decrease in expenses of \$114,672.67, making the increase in net receipts \$433,587.41. The receipts from sales of land during the year were \$127,508.55; and from interest on bonds, sterling exchange, etc., \$200,048.76—which added to the net receipts, as above, make the aggregate net receipts \$3,988,326.46. Besides paying the interest on the debt of the company from this fund, and two semi-annual dividends of 3½ per cent each, permanent improvements were made to the extent of \$1,271,451.63, comprising expenditures for increased terminal facilities at Chicago, construction and extension of double tracks, laying steel rails, and increasing the passenger equipment. After all these deductions are made, a balance of income remains amounting to the sum of \$155,874.73. The gross earnings of the entire system for the year 1882 were: Illinois Central Railroad in Illinois and Iowa, \$8,905,312.18; Chicago, St. Louis and New Orleans Railroad, or Southern Division, \$3,846,966.58—total, \$12,752,298.76; against \$12,645,548.84 in 1881, an increase of \$106,749.92. The dividend payable March 1, 1883, has been deducted from the surplus on hand December 31, 1882. Stock of the Chicago, St. Louis and New Orleans Railroad will be distributed July 2, 1883, in the proportion of 17 shares to each 100 shares of Illinois Central stock registered June 15.

The gross receipts of the Milwaukee, Lake Shore and Western Railway for the year 1882 were \$909,907, the operating expenses \$578,044, and the net receipts \$331,863; from which deduct fixed charges, amounting to \$199,071—leaving a surplus of \$132,792.

The capital stock of the Cincinnati, Wheel-

ing and New York Railroad Company has been increased to \$10,000,000.

The gross earnings of the Wabash, St. Louis and Pacific Railway for the year 1882 were \$16,851,690.36, the operating expenses \$11,664,752.11, and the net earnings \$5,186,938.25; to which add miscellaneous receipts \$328,760.05—making the total net receipts \$5,515,698.50, against \$3,674,846.17 in 1881, an increase of \$1,840,852.33. The funded debt now amounts to \$70,937,854; loans and notes payable, \$3,276,056; sundry securities on hand, \$8,667,696.

The Canadian Pacific Railway stock has been placed on call at the Amsterdam, Holland, bourse.

The report of the directors of the St. Louis, Iron Mountain and Southern Railway Company which was presented at the recent annual meeting of the stockholders, shows that the gross earnings in 1882 were \$7,582,208; operating expenses, including improvements, betterments, and taxes, \$3,910,883; cost of improvements, \$277,321; net earnings, \$3,671,325. The number of miles of main track is 882, an increase over 1881 of 163 miles, and the number of miles of side track 173. The equipment consists of 141 locomotives and 4,839 cars of all descriptions. The capital stock is \$22,845,085, and the funded debt \$33,929,901.

The report of the directors of the Missouri Pacific Railroad Company states that the gross earnings for 1882 were \$8,094,618; operating expenses, including cost of all improvements and taxes, \$4,476,210; net earnings, \$3,618,408; cost of all improvements, \$409,799. The equipment consists of 152 locomotives and 4,813 cars of all descriptions. The number of miles of main track operated is 990, an increase over 1881 of 205 miles, and the number of miles of side track 194. The capital stock is \$29,958,900, and the funded debt \$25,379,000.

The income of the Hannibal and St. Joseph Railroad Company for 1882 was \$2,424,347; running expenses and taxes, \$1,400,521; interest, \$653,620; dividend of 6½ per cent on the preferred stock, \$230,395, and surplus, \$39,811.

The capital stock of the Cincinnati and Eastern Railroad Company has been increased from \$100,000 to \$1,000,000.

The annual report of the treasurer of the Franklin Mining Company shows that the gross receipts last year amounted to \$752,530.46, and the expenditures to \$730,617.80, leaving a balance in the treasury of \$21,912.66. The company also has on hand 1,315,858 pounds of copper, worth, at 18 cents per pound, \$236,854.44; making the assets of the corporation \$258,767.10. The supplies at the mines are valued at \$79,880.55—making the total assets \$338,647.65. The liabilities amount to \$94,317.28, leaving \$244,330.37 as the entire resources over the liabilities. During the year 148,045 tons of rock were hoisted and treated, at a cost of \$2.35 per ton; number of pounds of mineral per ton, 26.86; number of pounds of ingot per ton, 22.02; average yield of ingot from mineral, 82.22; amount of ingot produced, 3,903.120 pounds, or a gain over 1881 of \$585,323 pounds; yield per ton of rock, 11.68 per cent mineral, being a gain over 1881 of 0.26 per cent in richness of ore.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Mar. 20.

	W.14.	Th.15.	F.16.	Sat.17.	M.19.	Tu.20.
Adams Express.....	130		127			129
Albany and Susq.....						
1st mortgage.....			111			
2d mortgage.....					107	
American Express....	90	89	88			89
Burl., C. R. & Nor.....						
1st mortgage 58.....			100 1/2	100 1/2	100 1/2	
Canada Southern....	68 1/2	67 1/2	66 1/2	67 1/2	67 1/2	67 1/2
1st mortgage guar.....	96 1/2	96 1/2	96 1/2	95 1/2	95	95 1/2
Canadian Pacific.....			59 1/2	59 1/2		
Central of N. Jersey.....	71 1/2	71 1/2	71 1/2	72	72 1/2	71 1/2
1st mort. 1890.....						
78, consol. ass.....				111 1/2	111 1/2	
78, convertible ass.....	112		112			
78, Income.....						108 1/2
Adjustment.....						
Central Pacific.....	81	81 1/2	80 1/2	80 1/2	81 1/2	80 1/2
68, gold.....	114 1/2	114 1/2	114	114 1/2		114 1/2
1st M. (San Joa).....						
1st M. (Cal. & Or.).....						
Land grant 68.....						
Chesapeake & Ohio.....						
1st pref.....	31 1/2				32	
2d pref.....					23	
1st mort., series B.....	31 1/2	31 1/2	31 1/2	31 1/2	32	31 1/2
Chicago and Alton.....	134 1/2	135	134	135	133 1/2	
Preferred.....						
1st mortgage.....						
Sinking Fund.....						
Chi., Bur. & Quincy.....	120 1/2	120 1/2	120	120 1/2	121 1/2	120 1/2
78, Consol. 1903.....		126 1/2				126 1/2
Chi., Mil. & St. Paul.....	101 1/2	101 1/2	101	101 1/2	101 1/2	101
Preferred.....		119 1/2	119		119 1/2	
1st mortgage, 88.....	132					
2d mort., 73-108.....						
78, gold.....						
1st M. (La. C. div.).....						
1st M. I. & M. div.).....						
1st M. (I. & D. ext.).....						
1st M. (H. & D. div.).....						
1st M. (C. & M. div.).....						
Consolidated S. F.....						
Chi. & Northwestern.....	133	132 1/2	132 1/2	132 1/2	132 1/2	132 1/2
Preferred.....	147 1/2	147 1/2	146	146	145 1/2	146
1st mortgage.....	105 1/2	105 1/2		105 1/2		
Sinking Fund 68.....			112 1/2			
Consolidated 78.....						
Consol. Gold b'ds.....						
Do. reg.....						
Chi., R. Isl. & Pac.....	123 1/2	125	122 1/2	122 1/2	122 1/2	121 1/2
68, 1917, c.....						122 1/2
Chi., St. P. Minn. & O.....	49 1/2	48 1/2	48 1/2	48 1/2	48 1/2	48
Preferred.....	107 1/2	103	106 1/2	107 1/2	108	107 1/2
Clev., Col., Cin. & Ind.....			72 1/2		73	72 1/2
Clev. & Pittsburg gr.....						
78, Consolidated.....						
4th mortgage.....						
Col., Chi., & Ind. Cent.....	6 1/2		6 1/2			
Del. & Hud Canal.....	108 1/2	107 1/2	107 1/2	107 1/2	108	108
Reg. 78, 1891.....	113 1/2					
Reg. 78, 1884.....						
78, 1894.....	117					116
Del., Lack. & Western.....	124 1/2	124 1/2	123	123 1/2	124 1/2	123 1/2
2d mortgage 78.....						
Consol. 1907.....						
Erie railway.....						
1st mortgage.....	127					
2d mort. 58, ext.....						
3d mortgage.....						
4th mort. 58, ext.....						
5th mortgage.....						
78, Consol. gold.....						
Great West. 1st mort.....						
2d mortgage.....						
Hannibal & St. Jo.....						
Preferred.....		30 1/2	81		80	
88, Convertible.....		104 1/2			104 1/2	
Houston & Tex. Cen.....	78 1/2				75	
1st mortgage.....						
2d mortgage.....			123			
Illinois Central....	144	143		144	144 1/2	
Lake Shore & Mich So.....	110 1/2	110 1/2	109 1/2	110 1/2	110 1/2	110 1/2
Consol. 78.....						
Consol. 78, reg.....						
2d Consolidated.....	121					
Lsh. & W. B. con. ass.....	102 1/2				102 1/2	
Loug Dock bonds.....						
Louisville & Nash.....	54 1/2	55 1/2	54 1/2	54 1/2	54 1/2	54
78, Consol. reg.....		118				119
Manhattan.....	45 1/2	45			43	
1st pref.....						
Met. Elevated.....		80	79 1/2	81		
1st mortgage.....	97					
Michigan Central.....	95 1/2	94 1/2	95	95	95	94 1/2
78, 1905.....	125 1/2					
Minn. & St. Louis.....	27					
Preferred.....			58			58

Morris & Essex.....	123 1/2	123 1/2			123 1/2	
1st mortgage.....	135				136	
2d mortgage.....					111 1/2	
78 of 1871.....						
78, Convertible.....						
78, Consolidated.....	121 1/2	12 1/2			121 1/2	
N. Y. Cen. & Hud. R.....	128	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2
68, S. F. 1883.....	104	104 1/2		104 1/2		104 1/2
68, S. F. 1887.....						
1st mortgage.....	129 1/2			130 1/2		
1st mortgage, reg.....	130 1/2					
N. Y. Elevated.....					105	
1st mortgage.....						
N. Y. & Harlem.....						
1st mortgage.....					130 1/2	
1st mortgage, reg.....						
N. Y. Lake Erie & W.....	37 1/2	37 1/2	37	37 1/2	37 1/2	37
Preferred.....						
2d Consolidated.....	96 1/2	96 1/2	96	95 1/2	96	96 1/2
New 2d 58 fund.....	95 1/2				94 1/2	
N. Y. N. Hav'n & Hart.....	175	174			173 1/2	174
North Mo. 1st mort.....						
Northern Pacific.....	50	43 1/2	49 1/2	50	50 1/2	50 1/2
Preferred.....	86 1/2	86 1/2	85	86 1/2	87 1/2	86 1/2
Ohio & Mississippi.....			33			
2d mortgage.....						
Consolidated 78.....						
Consol. S. Fund.....						117 1/2
Pacific Mail S. S. Co.....	40 1/2	41	40 1/2	40 1/2	40 1/2	
Pacific R. R. of Mo.....						
1st mortgage.....	105 1/2	105		105 1/2	105	
2d mortgage.....						
Panama.....						
Phila. & Reading.....	52 1/2	52 1/2	52 1/2	53 1/2	53 1/2	52 1/2
Pitta. Ft. W. & Chi. gtd.....	137	137			136	
1st mortgage.....						
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car.....	122		120 1/2	120	122 1/2	
Quickkill'r Min'g Co.....						
Preferred.....						
St. Louis & San Fran.....		30				
Preferred.....		48 1/2		49	48 1/2	
1st Preferred.....						
St. L., Alt'n & T. H.....	70 1/2	70 1/2	68 1/2		66	
Preferred.....			97 1/2		57	
1st mortgage.....						
2d mort. pref.....	108					
Income bonds.....						
St. L., Iron Mt. & S.....						
1st mortgage.....						
2d mortgage.....				109		
Toledo and Wabash.....						
1st mortgage.....			106			
2d mortgage.....			100			100
78, Consolidated.....						
St. Louis Division.....						
Union Pacific.....	96	95 1/2	95	95 1/2	96 1/2	95 1/2
1st mortgage.....	114 1/2	114 1/2	114 1/2		114 1/2	114 1/2
Land Grant 78.....				109		
Sinking Fund 88.....	115 1/2					
United States Ex.....						
Wabash, St. L. & Pac.....	29 1/2	29 1/2	28 1/2	29	29 1/2	28 1/2
Preferred.....	50 1/2	49 1/2	48 1/2	49 1/2	47 1/2	48 1/2
New mort. 78.....						
Wells-Fargo Ex.....	123 1/2	124	124			
Western Pacific b'ds.....						
Western Union Tel.....	85	84 1/2	84 1/2	84 1/2	84 1/2	82 1/2
78, S. F. conv., 1900.....						

## Boston Stock Exchange.

Closing Prices for the Week Ending Mar. 20.

	W.14.	Th.15.	F.16.	Sat.17.	M.19.	Tu.20.
Atch., Top. & San. Fe.....	81 1/2	81 1/2	80 1/2	80 1/2	81 1/2	81
1st mortgage.....				119		119
Land Grant 78.....						
Boston & Albany.....	175 1/2	175	174 1/2	175	176	
Boston and Lowell.....						94
Boston & Maine.....	162	161	160 1/2	160		160
Boston & Providence.....	163	162 1/2	163			
Bos'n. Hart. & Erie 78.....				46		
Burl. & Mo. R. L. G. 78.....						
Burl. & Mo. R. in Neb.....						
68, exempt.....						80
48.....						
Chi., Burl. & Quincy.....	120 1/2	120 1/2	121 1/2	120 1/2	121 1/2	120 1/2
Cin., Sand & Clev. (\$50).....			24 1/2			
Concord (\$50).....						
Connecticut River.....						
Eastern.....	51	50 1/2	47 1/2	48	48	47 1/2
New 68, Bond.....	113 1/2	112	112 1/2	112 1/2	113	112 1/2

Fitchburg.....	120	119				
N. Y. & New England.....	47	47 1/2	46 1/2	46	46 1/2	46
78.....		114 1/2	114 1/2	114 1/2		114 1/2
Northern N. H.....						
Norwich & Worcester.....						
Ogden & Lake Cham.....						
Old Colony.....	134		134 1/2	134 1/2	134	133 1/2
Ph., Wil. & Balt. (\$50).....						
Portl'd, Saco & Ports.....	112 1/2					
Pueblo & Ark Val 78.....	112 1/2	112	112 1/2			
Pullman Palace Car.....	121 1/2	121	121			
Union Pacific.....	96	96	95 1/2	95 1/2	96 1/2	95 1/2
68.....					112 1/2	
Land Grant 78.....						
Sinking Fund 88.....	115 1/2					115 1/2
Vermont & Mass.....						
Worcester & Nashua.....						57
Cambridge (Horse).....						
Metropolitan (Horse).....	70					70
Middlesex (Horse).....	101					
Cal. & Hecla Min'g Co.....	236		240			240
Quincy.....	48 1/2	48 1/2	48			48 1/2

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Mar. 20.

	W.14	Th.15.	F.16.	Sat.17.	M.19.	Tu.20.
Allegh'y Val. 73-108	.....	.....	.....	.....	.....	.....
78, Income.....	.....	43	.....	.....	.....	47
Buff., N. Y. & Phila.	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2
Cam'd'n & Am. 68, '83	.....	.....	.....	.....	.....	.....
68, 1889.....	.....	.....	.....	.....	.....	.....
Mort. 68, 1889....	112	.....	.....	112	111 1/2	.....
Camden & Atlantic.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	57	.....	.....
Catawissa.....	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
2d pref.....	.....	.....	.....	.....	.....	55
78, new.....	.....	.....	.....	.....	.....	.....
Del. & Bound Brook	.....	133 1/2	.....	.....	.....	.....
78.....	.....	124 1/2	.....	.....	.....	.....
Elmira & Williamspt	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
Hunt. & B. Top Mt.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Lehigh Navigation.	40 3/4	41	40 1/2	40 3/8	41	41
68, 1884.....	103	.....	103	103	.....	.....
Gold Loan.....	.....	111 1/2	.....	112	.....	.....
Railroad Loan...	.....	.....	.....	.....	.....	.....
Conv. Gold Loan...	.....	.....	.....	.....	.....	.....
Consol. Mort. 78.	.....	.....	.....	.....	.....	.....
Lehigh Valley.....	65 1/2	65 1/2	65 1/2	65 3/8	64 3/4	64 1/2
1st mort. 68, coup	122	.....	.....	.....	.....	.....
1st mort. 68, reg..	.....	.....	.....	.....	.....	.....
2d mort. 78.....	133	.....	.....	133	.....	.....
Consol mort. 68...	.....	.....	.....	.....	.....	.....
Consol.mtg.68,reg	.....	.....	.....	.....	.....	123
Little Schuylkill...	60	60	.....	60	60	.....
Minehill&Sch.Hav'n	.....	64	.....	.....	64	.....
North Pennsylvania	.....	68 1/2	68 3/4	.....	.....	.....
1st mortgage 68...	.....	.....	.....	.....	.....	.....
2d mortgage 78...	.....	.....	.....	.....	.....	.....
Genl. mtg. 78, coup	.....	.....	.....	.....	.....	.....
Genl. mtg. 78, reg	.....	.....	.....	.....	.....	.....
Northern Central...	.....	55 1/2	.....	55 1/2	55 3/4	.....
58.....	.....	.....	.....	.....	100 3/4	.....
Northern Pacific...	50	49 3/4	47 1/2	50	50 1/2	50 1/2
Preferred.....	86 1/2	86	85	86 1/2	87 1/4	86 1/2
Pennsylvania R. R.	61 1/2	62	61 1/2	62 1/2	62 1/4	61 1/2
1st mortgage.....	.....	.....	.....	.....	.....	.....
Gen'l mort.....	.....	122 1/2	.....	.....	.....	.....
Gen'l mort reg....	120 1/2	.....	.....	.....	.....	.....
Consol. mort. 68.	117 1/2	.....	.....	.....	.....	.....
Consol. mort. reg	.....	.....	.....	.....	.....	.....
Pa. State 58, new...	117	.....	.....	.....	.....	.....
do 48, new.....	.....	.....	.....	.....	.....	.....
do 3 1/2 8, 1912...	.....	.....	.....	.....	.....	.....
Phila. & Reading...	20 3/4	20 3/4	26 1/2	26 3/4	26 3/4	26 1/2
1st mortgage 68...	.....	.....	.....	.....	.....	.....
78 of 1893.....	.....	.....	.....	.....	.....	.....
78, new convert...	.....	.....	.....	.....	53	.....
Consol. mort. 78...	.....	.....	.....	.....	126	.....
Consol. mort. reg.	.....	.....	.....	.....	.....	126
Gen'l mort. 68....	96	96	95 1/2	95 1/2	95 1/2	95 1/2
Def. Income bonds	.....	.....	.....	.....	.....	.....
Philadelphia & Erie	.....	.....	.....	20	.....	.....
1st mortgage 58...	.....	.....	.....	.....	105	.....
2d mortgage 78...	.....	.....	113	.....	.....	.....
Pittsb., Cin. & St. L. 78	.....	.....	.....	.....	.....	.....
Pitts. Tit. & Buil. 78,	.....	95 1/2	.....	96	.....	.....
Schuylkill Navi t'n.	.....	.....	.....	.....	.....	.....
Preferred.....	15 1/2	.....	.....	.....	.....	.....
68, 1897.....	.....	.....	.....	.....	.....	.....
68, 1907.....	.....	.....	.....	.....	.....	.....
United Co. of N. J.	132	192	191 1/2	.....	.....	.....
Houstonville, (Horse)	.....	.....	.....	.....	.....	.....
Chestnut & Walnut.	.....	.....	.....	.....	.....	.....

## Baltimore Stock Exchange.

Closing Prices for the Week Ending Mar. 19.

Tu. 13. W. 14. Th. 15. F. 16. Sat. 17. M. 19.

Baltimore & Ohio...	105					
6s, 1885.....	105					
Central Ohio (\$50)...		50 1/2				
1st mortgage.....		109				
Marietta & Cincinnati...						
1st mortgage, 7s.....	132 1/2	132 1/2	132 1/2	132 1/2	132 1/2	132 1/2
2d mortgage, 7s.....	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2
3d mortgage, 8s.....	53 1/2	54 1/2	54 1/2	54 1/2	54 1/2	54 1/2
Northern Cen. (\$50).....	56 1/2	55 1/2	56	55 1/2	55 1/2	55 1/2
2d mort. 6s, 1885.....	105	104	104	104	104	104
3d mort. 6s, 1900.....						
6s, 1900, gold.....	116					
6s, 1904, gold.....						
5s, series A.....	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2
5s, series B.....	95 1/2					
Pitts. & Connellsv. 7s.....	122	122	122	122	122	122
Virginia 6s Consol.....	40 1/2	40 1/2	40 1/2	41 1/2	41	41
Consol. coupons.....						
10-40 bonds.....	35	35	35	35	35	35
Del'd Certificates.....						
New 3s.....				50 1/2		
City Passenger R. R.....	48	48				

## QUOTATIONS.

THE following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atchison, Colorado and Pacific 1st, 91; Atlantic and Pacific Western div. 1st, 96 1/2; American Dock and Imp. 5s, 88 1/2; Belleville and Southern Illinois 1st, 122 1/2; Baltimore and Ohio, Parkersburg div. 1st, 114; Boston and New York Air Line pref., 80; Buffalo, New York and Philadelphia 1st, 97 1/2; Chicago and Northwestern Interest bonds, 103 1/2; Cleveland, Painesville and Ashtabula 7s, 115 1/2; Columbia and Greenville pref., 54; Chesapeake and Ohio 6s, 1911, 101 1/2; do. cur. 6s, 53 1/2; do. 1st, series A, 108; Chicago and Eastern Illinois 1st, 100 1/2; Chicago and Northwestern S. F. 5s, 102; Chicago, St. Louis and New Orleans 5s, 103; Columbus, Chicago and Indiana Central inc., 72; Chicago, Milwaukee and St. Paul, La. C. and Dav. div. 1st, 97; do. Southern Minn. div. 1st, 106 1/2; do. Chicago and Pacific Western div. 1st, 92 1/2; do. Mineral Point div. 1st, 91 1/2; Cairo and Fulton 1st, 108; Central Iowa 1st, 108; Cleveland and Toledo 7s, new, 108; Chicago, St. Paul and Minn. 1st, 114; Chicago, St. Paul, Minneapolis and Omaha consol., 107; Cincinnati, Lafayette and Chicago 1st, 109 1/2; Denver and Rio Grande, 40 1/2; do. 1st, 109 1/2; do. consol., 90 1/2; Danbury and Norwalk, 63; East Tennessee, Virginia and Georgia, 9; do. inc., 34; do. 5s, 72 1/2; do. 1st, 117 1/2; Evansville and Terre Haute, 70; do. 1st, 97; Fort Worth and Denver, 30 1/2; do. 1st, 70; Green Bay, Winona and St. Paul, 6 1/2; Galveston, Harrisburg and San Antonio 2d, 107; Gulf, Colorado and Santa Fe 1st, 112; Hudson River 2d, S. F., 107; Houston and Texas Central 1st, Waco and N. W. div., 111 1/2; International and Gt. Northern coup. 6s, 83; do. 1st, 107; Indiana, Bloomington and Western, 33 1/2; do. inc., 48; do. 1st, 98 1/2; Louisville and Nashville gen'l mort. 6s, 95; do. St. Louis div., 99; Louisville, New Albany and Chicago, 1st, 102 1/2; Milwaukee, Lake Shore and Western pref., 44 1/2; do. 1st, 98; Missouri, Kansas and Texas, 31; do. gen'l mort. 6s, 80; do. consol. 7s, 105 1/2; do. 2d, 59; Missouri Pacific, 101 1/2; do. 1st consol., 103; do. 3d, 111 1/2; Manhattan Beach, 24; Metropolitan Elevated 2d, 83; Memphis and Charleston, 40; Milwaukee and Northern, 25; Mobile and Ohio, 18; do. 2d debent., 49; do. 4th debent., 30; Minneapolis and St. Louis 1st, 119; Michigan Southern, S. F., 107; New York, Chicago and St. Louis, 11 1/2; do. pref., 29; do. 1st, 95 1/2; New York, Ontario and Western, 25 1/2; Norfolk and Western pref., 41 1/2; do. gen'l mort., 101 1/2; New York, Lackawanna and Western, 89 1/2; do. 1st, 113 1/2; Nashville, Chattanooga and St. Louis, 58; Northern Pacific 1st, 104 1/2; New Orleans Pacific 1st, 108; New York, West Shore and Buffalo 1st, 76 1/2; Nashville and Decatur 1st, 115; New Jersey Southern 6s, guar., 96; New York Central 6s sub., 102 1/2; New York City and Northern gen'l mort. 48; Ohio Central, 12; do. 1st, 89; do. inc., 30; Oregon Trans Continental, 83 1/2; do. 1st, 93 1/2; Oregon Imp. Co., 86; do. 1st, 91; Oregon Short Line 6s, 96;

Ohio Southern, 1st, 82 1/2; Oregon Railway and Nav. 1st, 106 1/2; Peoria, Decatur and Evansville, 22 1/2; Panama S. F. 6s, 103; Quincy and Toledo 1st, 103; Richmond and Alleghany 1st, 77 1/2; Richmond and Danville, 53; do. debent., 63; Richmond, Danville and West Point, 22 1/2; Rochester and Pittsburgh, 19 1/2; do. 1st, 104 1/2; Rome, Watertown and Ogdensburg inc., 43 1/2; do. 5s, ext., 73 1/2; St. Paul and Duluth pref., 94; St. Paul, Minn. and Man., 50; do. Dakota Ext. 1st, 108 1/2; South Carolina, 22 1/2; do. inc., 58; do. 1st, 103; Southern Pacific of California 1st, 105 1/2; South Pacific of Mo. 1st, 104; St. Louis and San Francisco 2d, Class A, 98 1/2; do. B, 97; do. gen'l mort., 98 1/2; St. Louis, Alton and Terre Haute div. bonds, 75; St. Louis, Iron Mt. and Southern 5s, 79; St. Louis, Kansas City and Northern, Omaha div. 1st, 108; Toledo, Peoria and Western 1st, 108; Toledo, Delphos and Burlington inc., 10; Texas and Pacific, 39 1/2; do. inc. L. G., 65; do. Rio Grande div. 1st, 81 1/2; Texas Central 1st, 107 1/2; Union Pacific col. trust, 103; Utah Southern gen'l mort., 102; Virginia Midland, 24; Winona and St. Peter 1st, 107 1/2; Wabash, St. Louis and Pacific gen'l mort. 6s, 80 1/2; do. Chicago div. 1st, 80; Arkansas 7s, Central R. R. issue, 19; do. L. R., P. B. & N. O., 48; do. M., O. & R. R., 44 1/2; Alabama, Class A, 83; Louisiana consol. 7s, 66; Missouri 6s, 1887, 108; do. 1886, 107; do. H. & St. J. 6s, 1886, 109; Tennessee compromise bonds, 43; American Cable, 65 1/2; Mutual Union Telegraph, 18; do. 6s, 83 1/2; Colorado Coal and Iron, 32 1/2; do. 6s, 81; Ontario, 24; Standard, 6 1/2.

**Boston.**—Atchison, Topeka and Santa Fe 4 1/2s, 80; Atlantic and Pacific 6s, 94; do. inc., 19; Atchison R. R. 4 1/2s, 70 1/2; Bell Telephone Co., 280; do. 6s, new, 210; Boston, Clinton, Fitchburg and New Bedford, 54; do. pref., 133 1/2; Chicago, Milwaukee and St. Paul, Dubuque div. 6s, 103; Connecticut and Pasumpsic Rivers, 83 1/2; Chicago, Burlington and Quincy 4s, 86 1/2; do. S. W. div. 4s, 80; do. Denver Ext. 4s, 83 1/2; Chicago and West Michigan, 55; Detroit, Lansing and Northern, 98; Flint and Pere Marquette, 25; do. pref., 98 1/2; Fremont and Elkhorn 7s, 102; Iowa Falls and Sioux City, 84 1/2; Kansas City, Lawrence and Southern 5s, 104 1/2; Kansas City, Ft. Scott and Gulf, pref., 120; do. 7s, 112; Little Rock and Ft. Smith, 32; do. 7s, 91; Mexican Central, 20 1/2; do. inc., 21; do. 7s, 72 1/2; do. block, 91 1/2; Marquette, Houghton and Ontonagon, 55; Massachusetts Central, 2 1/2; do. 6s, 21 1/2; New York and New England 6s, 105; Northern Pacific 6s, 102 1/2; Portsmouth, Gt. Falls and Conway, 41; Rutland pref., 17 1/2; Sonora 1st, 103 1/2; Toledo, Cincinnati and St. Louis, 4; do. 6s, 40; Toledo, Delphos and Burlington, S. E. div. 6s, 38; Wisconsin Central, 23 1/2; do. 1st, 2d series, 50; Allouez Mining Co., 2; Franklin, 11 1/2; National, 1; Pewabic, 6 1/2; Silver Islet, 3.

**Philadelphia.**—Buffalo, New York and Philadelphia pref., ex-div., 31; Central Transp., 34; Continental Passenger, 100 1/2; Germantown Passenger, 70; Huntingdon and Broad Twp Mt. consol. 5s, 89; Harrisburg, Portsmouth, Mt. Joy and Lancaster 6s, 101 1/2; North Pennsylvania debent. 6s, 1905, 105; Nesquehoning Valley, 52 1/2; Philadelphia City 6s, 1895, 128; do. 6s, 1897, 130; do. 6s, 1899, 132; do. 6s, 1903, 133; do. 4s, 1885, 103 1/2; Philadelphia and Reading gen'l mort. 7s, 101 1/2; do. debent. 6s, 68; do. consol. 5s, 1st series, 82; do. scrip, 113; do. adj. scrip, 82 1/2; do. inc. 7s, 94; Pennsylvania Canal 6s, 85; Pennsylvania Co. 4 1/2s, 95; Philadelphia, Germantown and Norristown, 106 1/2; People's Passenger, 9 1/2; Perkerman 6s, 104; Pennsylvania and New York Canal 7s, 1896, 120 1/2; Philadelphia and Gray's Ferry Passenger, 45; Philadelphia, Wilmington and Baltimore 4s, 93 1/2; St. Paul and Duluth pref., 94 1/2; Texas and Pacific consol. mort. 6s, 94; Union and Titusville 7s, 95 1/2; West Philadelphia Passenger, 145; West Jersey and Atlantic, 38; do. 6s, 107; Western Pennsylvania 6s, 109.

**Baltimore.**—Atlanta and Charlotte 1st, 106 1/2; do. inc., 77 1/2; Baltimore and Ohio 1st pref., 180; Baltimore City 6s, 1893, exempt, 115; do. 6s, 1890, 112 1/2; do. 5s, 1894, 113 1/2; do. 5s, 1916, 122 1/2; Columbia and Greenville 1st, 101 1/2; do. 2d, 81; Charlotte, Columbia and Augusta, 32 1/2; do. 1st, 110 1/2; Maryland Defense 6s, 102 1/2; North Carolina consol. 4s, 78 1/2; Ohio and Mississippi, Springfield div. 1st, 117 1/2; Parkersburg Branch, 8 1/2; Richmond and Danville gold 6s, 94 1/2; Savannah City 5s, 83; Virginia new def., 4 1/2; Virginia consol. coupons, old, 52 1/2; Virginia Peckers, 35 1/2; do. coupons, 40; do. 10-40 coupons 44; do. old, 51 1/2; Virginia Midland 2d mort., 107; do. 5th mort., 95 1/2; Wilmington, Columbia and Augusta, 110; Western Maryland, 14.

## Statement of the Public Debt of the United States, March 1, 1883.

## DEBT BEARING INTEREST.

	Amount Outstanding.	Accrued Interest.
5 per cent funded loan of 1881, continued at 3 1/2 per cent.....	\$54,339,850 00	\$158,491 23
3 per cent loan of July 12, 1882.....	297,198,600 00	742,996 50
4 1/2 per cent funded loan of 1891.....	250,000,000 00	2,812,500 00
4 per cent funded loan of 1907.....	738,971,350 00	4,926,475 67
4 per cent refunding certificates.....	385,950 00	2,573 00
3 per cent navy pension fund.....	14,000,000 00	70,000 00

Aggregate of debt bearing interest.....\$1,354,895,750 00 \$8,713,036 40  
Interest due and unpaid.....1,968,217 66

## DEBT ON WHICH INTEREST HAS CEASED SINCE MATURITY.

	Amount Outstanding.	Interest due and unpaid.
to 6 per cent. old debt, 1837.....	\$57,665 00	\$64,174 81
5 per cent. Mexican indemnity stock, 1846-'52.....	1,104 91	85 74
6 per cent. bonds, 1847-'67.....	1,250 00	22 00
6 per cent. bounty land scrip, 1847-'49.....	3,175 00	210 06
5 per cent. Texas indemnity stock, 1850-'64.....	20,000 00	2,945 00
5 per cent. bonds, of 1858-'74.....	7,000 00	875 00
5 per cent. bonds, of 1860-'71.....	10,000 00	600 00
6 per cent. 5-20 bonds, 1862, called.....	360,950 00	5,178 29
6 per cent. 5-20 bonds, June 1864, called.....	50,400 00	974 90
6 per cent. 5-20 bonds, 1865, called.....	70,250 00	18,264 90
5 per cent. 10-40 bonds, 1864, called.....	279,600 00	36,821 88
6 per cent. Consol. bonds, 1865, called.....	353,500 00	11,650 96
6 per cent. Consol. bonds, 1867, called.....	780,300 00	107,960 92
6 per cent. Consol. bonds, 1868, called.....	240,950 00	20,378 04
6 per cent. loan, Feb. 8, 1861, matured Dec. 31, 1880.....	73,000 00	4,770 00
5 per cent. funded loan 1881, called.....	514,500 00	4,783 67
5 per cent funded loan 1881, called, continued at 3 1/2 p.c. Oregon War Debt, March 2, 1861, matured July 1, 1881.....	7,800 00	1,558 50
6 per cent loan of July 17 and Aug. 5, 1861, matured June 30, 1881.....	466,350 00	6,369 00
6 per cent loan of July 17 and Aug. 5, 1861, continued at 3 1/2 per cent, called.....	1,213,450 00	14,994 04
6 per cent loan of March 3, 1863, matured June 30, 1881.....	140,100 00	3,103 15
6 per cent loan of March 3, 1863, continued at 3 1/2 per cent, called.....	1,006,650 00	12,476 01
1-10 to 6 per cent. Treasury notes, prior to 1846.....	82,525 35	2,668 06
1-10 to 6 per cent. Treasury notes, 1846.....	5,900 00	200 60
6 per ct. Treasury notes, 1847.....	950 00	57 00
3 to 6 per cent. Treasury notes, 1857.....	1,700 00	99 00
6 per ct. Treasury notes, 1861.....	3,000 00	304 50
7 3-10 per cent. 3 years' Treasury notes, 1861.....	16,300 00	1,104 43
5 per cent. 1 year notes, 1863.....	41,005 00	2,066 85
5 per cent. 2 year notes, 1863.....	32,300 00	1,587 08
6 per ct. compound interest notes, 1863-64.....	216,420 00	44,253 11
7 3-10 per cent. 3 years' Treasury notes, 1864-65.....	138,300 00	20,325 91
6 per cent. certificates of indebtedness, 1862-63.....	4,000 00	253 48
4 to 6 per cent. temporary loan, 1864.....	2,960 00	244 19
3 per cent. certificates, called.....	5,000 00	394 31

Aggregate of debt on which interest has ceased since maturity.....\$13,311,945 26 \$405,889 76

## DEBT BEARING NO INTEREST.

Demand notes, 1861-62.....	\$59,180 00
Legal tender notes, 1862-63.....	346,681,016 00
Certificates of Deposit.....	11,340,000 00
Gold certificates, 1863 and 1882.....	74,850,740 00
Silver certificates, 1878.....	73,295,970 00
Unclaimed interest.....	\$4,619 96
Fractional currency, 1862, 1863 and 1864 \$15,392,432 17	
Less amount estimated as lost or destroyed, act of June, 21, 1879.....	8,375,934 00
	7,016,498 17

Aggregate of debt bearing no interest.....\$513,243,404 17 \$4,619 96



## RECAPITULATION.

	Amount Outstanding.	Interest.
Debt bearing interest in coin, viz:		
Bonds at 5 per cent, continued at 3½ per cent.	\$54,339,850 00	
Bonds at 4½ per cent.	250,000,000 00	
Bonds at 4 per cent.	738,971,300 00	
Bonds at 3 per cent.	297,198,600 00	
Refunding certificates	385,950 00	
Navy pension fund, 3 p.c	14,000,000 00	
	\$1,354,895,750 00	\$10,681,254 06
Debt on which interest has ceased since maturity.	13,311,945 26	405,889 76
Debt bearing no int., viz:		
Old demand and legal-tender notes	\$346,740,196 00	
Certificates of deposit	11,340,000 00	
Gold & silver certificates	148,146,710 00	
Fractional currency	7,016,498 17	
	\$513,243,404 17	
Unclaimed interest		4,689 96
	\$1,831,451,099 43	\$11,091,763 78
Total debt, principal and interest to date, including interest due and unpaid.		\$1,892,542,863 21
AMOUNT IN TREASURY.		
Interest due and unpaid	\$1,968,217 66	
Debt on which interest has ceased	13,311,945 26	
Interest thereon	405,889 76	
Gold and silver certificates	148,146,710 00	
U. S. notes held for redemption of certificates of deposit	11,340,000 00	
Cash balance available Mar. 1, 1883.	131,093,986 10	
	\$306,266,748 78	
Debt, less am't in Treas'y Mar. 1, 1883.	\$1,586,276,114 43	
Debt, less am't in Treasury Feb. 1, 1883.	1,593,906,792 07	
Decrease of debt during the month	\$7,630,678 54	
Decrease of debt since June 30, 1882.	\$102,638,346 29	
BONDS ISSUED TO THE PACIFIC RAILROAD COMPANIES, INTEREST PAYABLE IN LAWFUL MONEY.		
	Amount Outstanding.	Accrued Interest not paid.
Central Pacific bonds, 1862-64	\$25,885,120 00	\$258,851 20
Kansas Pacific bonds, 1862-64	6,303,000 00	63,030 00
Union Pacific bonds, 1862-64	27,235,512 00	272,355 12
Cent. Branch Union Pacific bonds, 1862-64	1,600,000 00	16,000 00
West'n Pacific Bonds, 1862-64	1,970,560 00	19,705 60
Sioux City & Pacific bonds, 1862-64	1,628,320 00	16,283 20
Totals	\$64,623,512 00	\$646,235 12
Interest paid by the United States, \$57,283,388.10; interest repaid by transportation of mails, &c., \$16,370,190.96; interest repaid by cash payments: 5 per cent net earnings, \$655,198.87; balance of interest paid by United States, \$40,257,998.27.		

The foregoing is a correct statement of the public debt, as appears from the books and Treasurer's returns in the Department at the close of business, February 28, 1883.

CHARLES J. FOLGER,  
Secretary of the Treasury.

## Mr. Sherman on Protection.

In a lecture recently delivered before the Brooklyn Reform Club Mr. Sherman is reported to have said: "In 1881 the total importation of iron was valued at \$33,000,000. Of this amount only \$75,000 consisted of goods described in the official list as fit for family use; \$2,500 worth were used as ship supplies; chains to the value of \$110,000 might possibly be used by farmers without further manufacturing. Railroad bars and supplies amounted to the value of \$4,120,000. All the rest, so far as can be ascertained, consisted of articles used exclusively for manufacturing purposes of the value of over \$28,000,000, and, which is the most absurd feature of all, more than \$24,000,000 of the whole \$33,000,000 were used exclusively in the home manufacture of iron itself. Thus, out of the \$12,000,000 taxes laid on imported iron the iron manufacturers themselves paid about \$9,000,000, showing that the tariff did them at least three times as much harm as good. As with iron so with steel, wood, tin, wool woolen goods, etc. Taking these branches

of manufacture together—and they are among the most clamorous for protection—we find that the total amount of duties imposed upon them for protective purposes in 1881 was \$54,478,878, of which \$50,000,000 was paid by manufacturers themselves, including railroad builders, or nearly \$43,300,000 excluding railroad builders."

## The Anglo-American Land Mortgage And Agency Company (Limited).

### CAPITAL, £500,000.

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in the United States and Canada, and of drafts drawn in  
the United States on Foreign Countries.

## COMMERCIAL DEPARTMENT.

### New York Markets.

Quotations of Wednesday, March 21.

FLOUR quiet and depressed; Corn meal dull at \$3.10@3.60 for Western, and \$3.60@3.75 for Brandywine.

COTTON—Spots dull, and 1-16c. lower; sales 176 bales; middling uplands, 10½c.; do. Gulfs, 10½c. Futures, 2@5 points lower, except next crop, closing steady at 10 04c. for March, 10.10c. for April, 10.29c. for May, 10.44c. for June, 10.50c. for July, 10.67c. for August, 10.42c. for September, 10.45c. for October, 10.06c. for November, and 10.07c. for December; sales 104,000 bales; receipts at the ports, 18,481 bales.

PROVISIONS—Pork was quiet but essentially unchanged; the Chicago market was lower, owing to large receipts of hogs; sales 80 bbls. mess on the spot, \$19.25; closing with the range at \$19.25@19.50. Bacon quiet at 10½c. for long clear. Cut meats steady; 75 bbs. pickled bellies, 14 lbs., 10½c. Beef hams quiet. Lard was weak and lower, with a good speculation at the decline; sales on the spot, 100 tcs. prime city, 11.30@11.20c.; 250 tcs. do. Western, 11.47½@11.45c.; refined to the Continent, 11.50c.; South America, 11.80c.; for future delivery, sales 30,000 tcs., including March, 11.47c.; April, 11.49@11.48c.; May, 11.56@11.48c.; June, 11.59@11.50c.; year, 10.97@10.93c.; closing weaker; March, 11.40@11.43c.; April, 11.43@11.44c.; May, 11.45c.; June, 11.47@11.49c.; July, 11.52c.; August, 11.55c.; year, 10.85c. Dressed hogs firm at 9½@10c.; pigs, 10c. Butter steady; new creamery, first and extra, 24@37c.; State dairy, 18@32c.; Western factory, 11@20c.; do. creamery, 14@24c.; rolls, 10@20c. Cheese unchanged; State factory, 9@14½c.; Ohio, 8@13½c.; creamery, 5½@8½c. Eggs steady; State, &c., 21½@22c.; Western, 21@21½c.; Southern, 20½@21½c.; poor do., 19@20c.; duck, 34@36c.

GRAIN—Wheat fairly active for export; speculation less active; prices ¼@1c. lower; spot sales, 200,000 bush. at \$1.02@1.24½ for red, including No. 1 at \$1.24@1.24½, No. 2 at \$1.20½@1.20¾ delivered, and No. 3 at \$1.16@1.18½; \$1.01½ for No. 2 white, and \$1.10 for No. 1 do.; of options, sales 3,440,000 bush. No. 2 red at \$1.17½@1.18 for March, \$1.18½@1.19½ for April, \$1.20½@1.21½ for May, \$1.21½@1.22 for June, and \$1.18 for July. Rye and barley quiet. Oats firm; sales 560,000 bush. at 49½@51c. for mixed, and 51@56c. for white, of which No. 2 at 50½@50¾c. for mixed, and 53½c. for white; also No. 2 mixed at 50¾c. for April, 51½@51¾c. for May, and 51½@51¾c. for June. Corn lower; spot sales 182,000 bush. at 66½@68½c. for new No. 2 mixed, 61½@62c. for No. 3 do., 65½c. for steamer mixed, 57@69c. for ungraded do., 64½@66½c. for steamer white, 68@70c. for white Southern, and 68c. for Southern yellow on the pier; of options, sales 2,288,000 bush. No. 2 mixed at 66½@67½c. for March, 67½@68c. for April, 68½c. for May, 68½@66½c. for June, and 69½c. for July. After 'Change wheat closed weak; No. 2 red winter, cash, \$1.20½ delivered; March, \$1.17½; April, \$1.18½; May, \$1.20½; June, \$1.21½. Corn weak; No. 2 mixed, cash, 68½c., delivered; March, 66½c.; April, 67½c.; May, 67½c.; June, 67½c. Oats weak; April, 50½c.; May, 50½c.; June, 51c.

GROCERIES—Rio coffee on the spot was dull at 9@9½c. for fair cargoes; options firmer but quiet; 5,250 bags No. 7 sold at 7.35@7.40c. for April, 7.55@7.60c. for May, 7.70@7.75c. for June, and 8.05c. for August; mild steady; 1,000 bags Maracibo sold on p. t. Rice unchanged. Molasses firm but quiet; 50-test Cuba, 32@34c. bid and asked. Raw sugar quiet and depressed at 7 1-16c. for fair refining; sales 700 hhds. at 6½c. for molasses sugar, and 6 13-16@6½c. for Cuba; refined quiet at 8½@9½c. for hards, and 8½@8¾c. for "A" standard. Tea easier for greens at the sale to-day, but firm for Japan and blacks.

## Imports of Foreign Dry Goods at New York.

The Imports of Foreign Dry Goods at New York for the month of February, were:—

## ENTERED FOR CONSUMPTION.

	1881.	1882.	1883.
Manufs. of wool....	\$2,116,530	\$2,663,861	\$2,452,550
Manufs. of cotton....	2,453,339	2,781,679	2,713,847
Manufs. of silk.....	2,643,914	3,572,618	2,975,643
Manufs. of flax.....	1,073,483	1,503,875	1,356,642
Miscell. dry goods....	977,072	1,049,406	956,933
Total ent. for consumption .....	\$9,287,388	\$11,578,839	\$10,455,665

## WITHDRAWN FROM WAREHOUSE.

	1881.	1882.	1883.
Manufs. of wool....	\$700,627	\$639,365	\$839,745
Manufs. of cotton....	451,133	433,076	591,618
Manufs. of silk.....	491,233	497,918	809,568
Manufs. of flax.....	562,523	425,632	457,238
Miscell. dry goods....	290,474	360,792	331,671
Total withdr'n from warehouse.....	\$2,495,992	\$2,356,783	\$3,029,240
Add ent. for con....	9,287,388	11,578,839	10,445,665
Total thrown on the market.....	\$11,783,380	\$13,935,622	\$13,484,905

## ENTERED FOR WAREHOUSING.

	1881.	1882.	1883.
Manufs. of wool....	\$619,172	\$624,750	\$1,112,664
Manufs. of cotton....	334,587	350,595	608,779
Manufs. of silk.....	301,497	367,818	851,215
Manufs. of flax.....	384,059	377,870	385,253
Mis. dry goods.....	369,856	345,855	317,740
Total ent. for warehouse .....	\$2,069,171	\$2,066,858	\$3,275,052
Add entered for consumption .....	9,287,388	11,578,839	10,455,664
Total ent. at port....	\$11,356,559	\$13,585,697	\$13,730,717

The Imports of Foreign Dry Goods at New York for two months from January 1, were:—

## ENTERED FOR CONSUMPTION.

	1881.	1882.	1883.
Manufs. of wool....	\$3,714,524	\$5,165,135	\$4,642,395
Manufs. of cotton....	5,344,606	6,195,184	5,589,005
Manufs. of silk.....	5,104,266	7,263,853	5,485,174
Manufs. of flax.....	2,214,868	3,177,072	2,500,828
Mis. dry goods.....	1,702,803	2,032,638	1,655,247
Total ent. for consumption .....	\$18,111,007	\$23,833,882	\$19,923,249

## WITHDRAWN FROM WAREHOUSE.

	1881.	1882.	1883.
Manufs. of wool....	\$1,552,464	\$1,328,258	\$1,601,383
Manufs. of cotton....	1,594,774	1,198,698	1,723,420
Manufs. of silk.....	1,233,256	1,150,335	1,689,139
Manufs. of flax.....	1,426,315	1,026,455	1,066,828
Mis. dry goods.....	544,025	604,615	609,371
Total withdrawn from warehouse.....	\$6,350,864	\$5,308,611	\$6,689,604
Add entered for consumption ...	18,111,007	23,833,882	19,923,249
Total thrown on the market.....	\$24,461,871	\$29,142,243	\$26,612,853

## ENTERED FOR WAREHOUSING.

	1881.	1882.	1883.
Manufs. of wool....	\$1,276,957	\$1,378,089	\$2,019,458
Manufs. of cotton....	1,194,120	1,180,256	1,636,230
Manufs. of silk.....	967,822	963,482	1,921,218
Manufs. of flax.....	1,067,125	963,482	1,928,213
Mis. dry goods.....	596,753	608,951	672,422
Total entered for warehouse .....	\$5,102,777	\$5,096,635	\$7,152,780
Add entered for consumption ...	18,111,007	23,833,882	19,923,249
Total ent. at port....	\$23,213,784	\$28,930,517	\$27,076,029

## Chicago Grain Markets.

Quotations of Wednesday, March 21,

	0:30 A.M.—Opening.	1 P.M.—Closing.
Wheat....	Mar. 1.10 3/4	May 1.04 1/4
Corn....	59 1/2	54 1/4
Oats....	43 1/4	39 1/2
Pork....	18.42 1/2	18.25
Lard....	11.42 1/2	11.30
S. Ribs..	9.95	9.90

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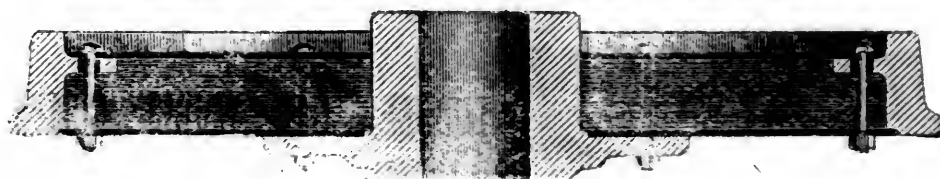
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## MISCELLANEOUS.

International Electric Exhibition, Vienna, 1883.

THE extent of the Vienna Electric Exhibition may be estimated by the fact, that the capacity of their engines has been fixed in round numbers at 1,000 horse-power. The majority of them are calculated to serve for lighting the exhibition buildings and grounds. The boilers and engines employed for the production of motive power, will in the majority be of the fixed type, without, however, excluding portable boilers and engines. All those boilers and engines, of whatever type they may be, will be at the same time objects of exhibition. It has been proposed to arrange the boilers and steam engines almost in the same way as they would be for permanent service, and so that they be easily and agreeably inspected by the visitors. The machine department will thus prove a great attraction for the public in general, and particularly offer a good opportunity to engineers of making valuable comparative studies. We do not doubt that such an arrangement of the department of motive power will be preferable to those carried out at Paris and Munich, which were rather in a more temporary and subordinate way. Although such an arrangement will considerably add to the expenses, nevertheless the Commission has consented to sacrifice a greater amount of money, in order to secure an opportunity of general instruction and thus bring the important question how to construct boilers and engines for electrotechnic purposes more and more to its solution. Two important firms in the boiler line have separately offered as an object of exhibition, each to furnish the whole number of boilers required for the production of 1,000 horse-power. The Commission, however, is, besides these most valuable offers, in possession of other numerous applications for exhibiting boilers, and is ready to accept still more in order to offer all different systems an opportunity to show their relative merits.

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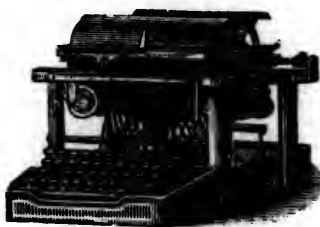
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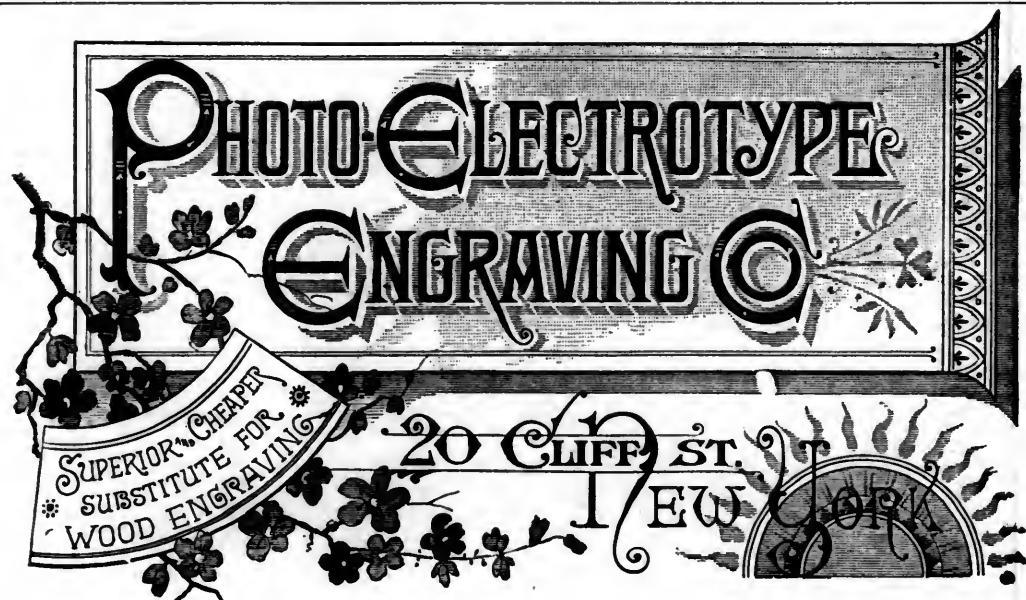
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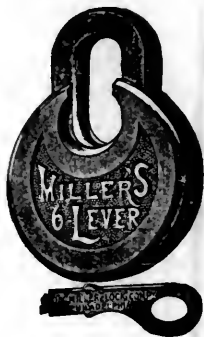
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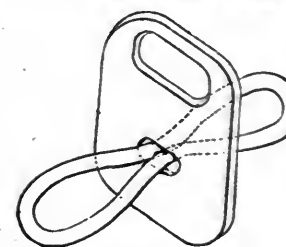
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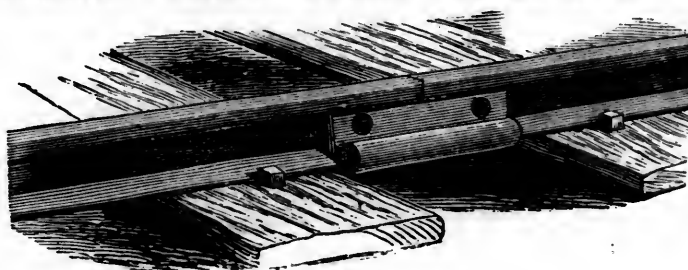
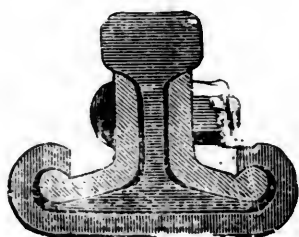
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[Mention this paper.]

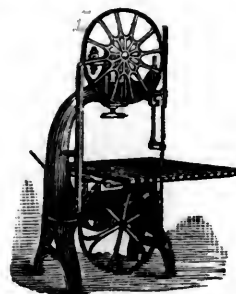


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## TRAMWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editor. All communications should be accompanied by the name and address of the writer. The English nomenclature of "Tramway" is adopted in this department as being of greater convenience and more specific in its meaning than "street railway," though in allusion to individual organizations we shall preserve their corporate titles. It is our hope to nationalize the term Tramway which is now generally used in every English speaking territory with the exception of the United States.]

### SMOKING CARS ON TRAMWAYS.

THE smoking car is a comparatively recent innovation in American tramways. The desirability of furnishing the fraternity of smokers with conveyances in which they may enjoy a refreshing whiff of tobacco on their way to and from their places of business is readily apparent, and one would naturally suppose that tramway managers would have recognized ere this the wisdom of introducing smoking cars upon their roads as a means of increasing their profits. In truth, however, the introduction of smoking cars was not accomplished until the opening of the elevated roads, when tramways were forced to adopt new methods and features in order to compete profitably with their wealthy rivals. Nevertheless, we now have smoking cars upon our tramways and will not stand upon the order of their coming. They are a luxury that four men out of five appreciate, and it is to be hoped that the cars will be increased in number. For some reason or other the elevated roads have not seen fit to attach smoking cars to their trains, and until they do so, there are a large number of travelers who will in preference patronize the tramways independently of any question of economy. By the ordinary business man, one thing is greatly appreciated, and that is an after-breakfast period of half an hour, in which he may peruse his morning paper and solace himself with a cigar. If by an economy of time this half-hour may be enjoyed while he is being conveyed to his place of business there is no twinge of uneasiness created that the moments thus consumed are purloined from his working hours. Such men, as a rule, are indifferent to the fact that the elevated roads will save them five or ten minutes on their daily trips, being prepared to make the trifling sacrifice of time in order to enjoy a few moments of uninterrupted ease, and this class of travel the tramways may continue to hold in perpetuity, despite the progress of rapid transit in which passengers are compelled to forego this luxury.

But in addition to the mere running of smoking cars there are two points in which their

management should be rigidly supervised. The cars should be comfortably warmed and should never be crowded. When the seats are all occupied, no more passengers should be allowed to board a car. Let every alternate tram-car run during that period which is known in elevated railroad parlance as the "commission hours" be a smoking car with comfortable seats partitioned off to avoid crowding, and the tramways will experience a financial return far in excess of the comparatively small outlay that the introduction of such features might involve.

### Track Construction for Street Railways.

BY AUG. W. WRIGHT, SUPERINTENDENT OF TRACK AND CONSTRUCTION OF THE NORTH CHICAGO CITY RAILWAY.

EDITOR AMERICAN RAILROAD JOURNAL:

SIR:—I note with pleasure your new departure in devoting space to street railway interests; heretofore unrepresented, so far as I know, in any technical paper, although representing investments of many millions of dollars and employing thousands of men. If the men engaged in this work will respond to your invitation, and write upon the subjects with which they are familiar, much good may be accomplished.

The recent organization of a society devoted to their interests is a move in the right direction.

Seventeen years' experience in various capacities upon steam and horse railroad work is my warrant for addressing your readers upon "Track Construction for Street Railways," and I will, briefly as possible, outline the method pursued by the North Chicago City Railway under my supervision.

The grades of the various streets in which our tracks are laid are established by act of the Common Council, and we are required to conform accurately to them. The shape of our rail is fixed by law as follows: head two inches wide, projecting one inch above a tread for wagons three inches wide. This is an objectionable form, as all the weight of car with its load comes upon the outside edge of track, and heavily loaded wagons in turning out tend to spread the tracks.

Having obtained the heights of grades upon the proposed line of track, and ascertained the precise street line, I have strong oak stakes driven each fifty feet to grade and line. A gang of men under a foreman excavate holes for the cross ties, spacing them four feet from center to center, measuring with a pole sixteen feet in length, marked each four feet. He is careful to excavate an inch or two deeper, as it is easy to raise the tie, but a work of time and expense to lower one after the stringers and rails are placed upon it. We use cedar cross ties, eight feet long, six inches thick and not less than five inches face. They are sawn or hewn smooth and true with the bark removed. Our stringers conform in width to the rail, i.e., five inches, and eight inches high, one-third should be twelve feet and balance sixteen feet

in length to break joints with rails thirty feet long. We use Norway pine, seasoned in the air from one to two years. They are passed through a planer, dressed on four sides, one of which conforms accurately to the rail, which has a hollow head.

Another gang of men place the stringers loosely upon cross ties, being careful not to allow two stringer joints (one under each rail) to come upon the same tie; and not to permit a stringer joint to come nearer than four feet to a rail joint. They then place the rails upon the stringer and a carpenter cuts out the stringer accurately at the rail joint to receive the chair. Particular attention is paid to this operation, for the joint has much to do with the difference between good and bad track. We used a cast iron joint chair twelve inches long, but upon our main line the rail wore into the chair one-eighth of an inch in twelve months, and we now make the chair eighteen inches long and have the part chilled where the rail joint comes. They weigh sixteen (16) pounds and cost in our yard forty-five cents. Two-thirds of the length of the chair is placed under the rail in the direction of the traffic, to equalize the wear. We use a steel rail for straight track weighing forty-five pounds per yard, and Wharton's patent steel rails on all curves.

The rails having been placed on the stringers and spiked, the assistant engineer gives the center stake for line in the right hand track every fifty feet, indicating the exact line by a small tack driven into the head of a firm oak stake. He then sets four grade stakes, if it be a double track, conforming accurately to the city grade. Another foreman then places a straight-edge on the stakes fifty feet apart and sights along the top of both rails and raises them to line with the straight-edges. The earth is then thoroughly tamped with iron bars under each cross tie. Four cast-iron "knees" (or angle irons) are fitted inside and outside of stringers upon each cross tie. As the greatest strain is outwards, the outside knee is the largest, being eight inches high, weighing seven pounds, costing in our yard twenty cents. The inside knee is four inches high, so as to interfere as little as possible with pavement; weight two pounds, costing seven cents. The knees are fastened with wrought iron spikes to tie and stringer. The right hand track is then lined and securely tamped under stringers with iron bars. I use the Huntington track gauge with the middle indicated by a fine file mark. By adjusting this mark to the track head at the end of each fifty feet, the foreman has only a short distance to sight to get the track perfectly straight. The other track is lined by placing gauges four feet, or four feet six inches, long, as the case may be, against the track already lined, and adjusting it to the gauge, thus getting the two parallel without sighting.

Where there is as much wooden pavement in use as in Chicago and when the trains follow the tracks to such an extent, the pavement is soon cut into ruts adjoining the rails, so our track has to be built strong enough to stand without support from the pavement. A careful count for ten hours at one point on our track showed that 1,471 vehicles passed on the sixteen feet maintained by the company ex-

clusive of 642 cars, and only fifty-three vehicles outside of the sixteen feet. In other words we had to maintain 39-40 of the wear from travel on that pavement.

The foregoing construction may seem unnecessarily substantial to many, but it certainly pays in the long run, and our city being so flat enormous loads are carried on rush trips. We had 120 passengers on an open car at one time. The average weight of Illinois men is 158½ pounds; women, 133½ pounds. Assume one-fourth women, the balance men, and we have a live load of 18,270 pounds. Car weighs 4,800 pounds, a total of 23,070 pounds concentrated upon six feet of track; a load on each wheel of 5,767½ pounds. This requires strength, or rapid depreciation from wear and tear will soon ensue. I believe it would be money well spent to preserve the stringers by some of the well known processes.

Having made careful experiments on the adhesion of various nails, spikes and screws, I have adopted a drive screw for fastening rail joints. Parties interested will find these tests in a paper read before the Western Society of Engineers, April 5th, 1881, and published in the *American Engineer* of that year, page 82.

In conclusion I append a detailed estimate of the cost of one mile of double track laid last summer exclusive of pavement, but including the cost of taking up the old track that it replaced.

19 Days Foreman @.....	\$3.50	\$66.50
19 " " @.....	2.00	38.00
19 " " @.....	1.75	33.25
920 " Laborer@.....	1.50	1,380.00
60 " Carpenter@.....	3.00	180.00
32 " Teams@.....	5.00	160.00
2,640 Cross ties@.....	.34	879.60
70,400 Ft B. M. Stringers@.....	13.25	932.80
Dressing same to shape@.....	5.00	352.00
5,280 Large Knees@.....	.20	1,056.00
5,280 Small Knees@.....	.07	369.80
704 Joint Chairs@.....	.45	316.60
1,408 Joint Screws@.....	.03½	49.28
10 Kegs Spike ½ x 5@.....	4.80	48.00
18 " 5-16 x 5@.....	5.25	94.50
6 " Out Spike, 6od@.....	4.00	24.00
158 2-5 Tons Steel Rails@.....	55.00	8,712.00
		\$14,710.33

### Cable Tramways in this City.

MR. R. M. JOHNSON, of Chicago, came to this city a few days since, as a representative of the United States Cable Railway Company, to place on exhibition a cable tramway, an invention of C. W. Rasmussen, of Chicago. "This invention," said Mr. Johnson to a representative of the daily press shortly after his arrival, "we believe, is an improvement on that recently adopted by the Chicago City Railway Company. It cost \$105,000 a mile to build their road, while we estimate ours will cost about one-fifth of that amount. Simplicity is another one of our good qualities. We do not excavate the streets nor do we require grips or grip-cars, and ten tons of coal a day will do the work of one thousand horses. The Third Avenue Railway Company has consented to examine our model and to consider its adoption. The Brooklyn Bridge Company has it also under consideration. We have taken out patents in England, France, Germany, as well as in the United States, and anticipate the ultimate adoption of our system by all the street railroad companies throughout the country."

### "Bob-Tail Car" Warfare.

A SUIT to test the right of the bobtail car companies to compel passengers to leave their seats and put their fares in the box came up recently in the Kings County Supreme Court, before Judge Cullen. The action was brought by Peter H. Coverly, a member of the Anti-Bobtail Car Association, against the Greenpoint and Bushwick Avenue Car Company for \$10,000 for being ejected from the company's car on which he was a passenger the 4th of February last. Counsel for plaintiff held that the order of the company compelling the passengers to put their fares in the box was unreasonable. Counsel for the defendant contended that it was a reasonable order. Judge Cullen so held and dismissed the case.

### TRAMWAY NOTES.

AN article on the subject of "Track Construction for Street Railways," by Superintendent Wright of the North Chicago City Railway, appears upon the preceding page. This communication will naturally be of interest to our readers, and we trust that other tramway officials and managers may in the near future be induced to follow Mr. Wright's example and contribute articles appertaining to the general welfare of their roads to the Tramway Department of the AMERICAN RAILROAD JOURNAL, the first publication in the country to espouse their cause. Mr. Wright has adhered to the prevailing nomenclature of "street railway," and while urgent to bring about the adoption of the term tramway, we feel that we have no right to change the caption or phraseology of a contributor's article without his consent.

THE Twin City Railway Company of Pittsburgh, Pa., has recently been incorporated with the Hon. Robert Liddell as president. The object of this corporation is to construct a tramway from the foot of Fifth avenue on Liberty street to Sixth street, thence to Allegheny over the suspension bridge to Federal street, thence to Robinson, Corry, Martin, Marion avenue, Ridge avenue, Irwin, Lincoln and Grant avenues to Boquet street, thence to Cabinet, Sheffield, Manhattan, Nixon and Chartiers to Brady street at Beaver avenue. The amount of the capital stock is \$50,000, divided into shares of \$50 each. The length of the road is to be three and a half miles, double track. Morton Hunter, Esq., J. G. W. Smith, John L. Abell and J. J. Speck constitute the Board of Directors.

GEORGE WILLIAMS, president of the Citizens' (Tenth and Eleventh streets) Passenger Railway Company, of Philadelphia, died at his residence in that city on Sunday last, after a short illness, aged sixty-nine years. He was born in that city, and, with the exception of four years, when he lived in Delaware, has always resided there. He was largely engaged in the lumber business during the greater portion of his business life, retiring from it but a few years ago. He became president of the Citizens' Passenger Railway Company at the time of its organization and continued at its head up to his death.

He was also the president of the Board of Presidents of the City Passenger Railways from its organization.

IN our News Department this week, we publish the remainder of the Premium List of the National Railway Exposition at Chicago. In devoting the space we have to the approaching display, the interest of tramways were of the first consideration. We will cheerfully furnish any other information within our knowledge, that may be desired by those interested in the recognition of tramways at the Exposition.

IN the contemplated introduction of cable traction on certain tramways in New York City, the Hallidie Steel-Rope System will be employed, as now used on the cable traction tramway of San Francisco and Chicago. It is claimed that by this system that the New York tramways could make a uniform profit of three cents a fare. Their cars running at the rate of eight miles per hour.

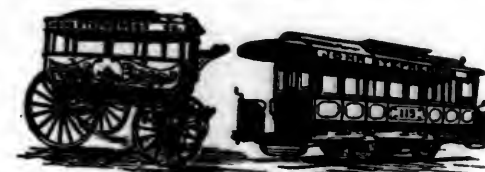
IN the course of a few weeks we shall publish in this department, an illustrative diagram showing the operation of cable traction on tramways. The most thorough and minute description fails to convey as complete an understanding of a complicated mechanical arrangement, as the simplest diagram, and we wish our readers to comprehend the cable system in all its details.

THE Baltimore City Council Committee on Passenger Railways recently heard the Hon. Oden Bowie, president of the City Passenger Railway, on applications for extension of franchises in the north and central sections. Dr. White was also heard on the Commercial Railway franchise. The committee will have further hearings on the questions involved.

A TRAMWAY company, with a capital stock of \$50,000, has been organized at Columbus, Ga., and that growing city will soon have a tramway completed.

A CABLE tramway is to be experimentally introduced in Providence, R. I.

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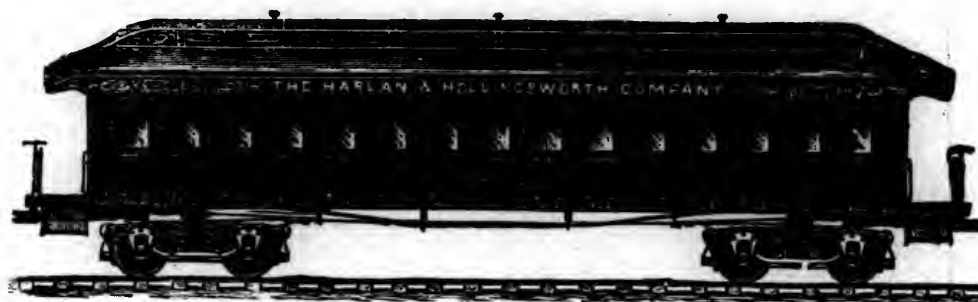
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## NEW INVENTIONS.

## TO INVENTORS AND PATENTEES.

This department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Tramways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full descriptions of those most useful and important are published *free of charge*.

Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

## A WORD OR TWO OF EXPLANATION.

[We reprint the following from our issue of Feb. 24, and shall keep it standing at the head of this column until the purposes of the Department of New Inventions are fully understood by all our readers].

THE department of New Inventions is conducted in the interests of our readers and of inventors of devices applicable to Railroads, Steam Navigation, Mining, Street Railways, etc. We believe that full descriptions of new and patented appliances of this nature will prove interesting to our readers, and cannot fail to bring the inventor's device into the prominent notice of that class of persons among whom he looks for the heaviest sales and royalties. No charge is made for the insertion of such description in this department, but there is a *sine qua non* requisite in all inventions before we will devote space toward their publication. They must be *new* and *valuable*. It is not our intention to offer a free advertisement to any person, and the inventor whose invention is given full description in the AMERICAN RAILROAD JOURNAL must have produced something of importance and value.

We have not established this department in a spirit of philanthropy, and do not lay claim to any special generosity in publishing descriptions of new inventions free of charge. Our aim is to increase the number of both our readers and advertisers. The continued publication of valuable patents will, we think, attract readers who are interested in the problems connected with railroad and steamboat management, mining, the management of street railways, and the like, while the value of an advertisement in the columns of the JOURNAL will ultimately be apparent to inventors of appliances tending to solve these problems. It is purely a business transaction, and we do not wish inventors to feel themselves under any obligation to us through our description of

their patents. If they choose to advertise or order a number of copies of the AMERICAN RAILROAD JOURNAL containing such descriptions, we would be glad to have them do so, and may possibly ask them for an advertisement or an order, in the form of a fair business proposition, but they are under no obligation to accept our advances. In other words, there is *nothing* obligatory on their part, but at the same time there is nothing obligatory on our part either. We reserve the liberty to ignore any invention whose description is sent us without assigning any reason for such action, and if our opinion and that of the inventor as to the utility of the invention chance to differ, we propose to be guided solely by the former.

The cause of these few words of explanation lies in the fact that many inventors seem to recognize an obligation on our part to describe in full their inventions, while they in return do not feel compelled to go to any expense in order to acknowledge such publication. It would be manifestly impossible for us to publish full descriptions of all inventions of this class, when the weekly list of new patents of the sort numbers fifty or more. Every new invention of the character mentioned above is noticed in our weekly list of patents, and we shall further endeavor to give a brief description of all, but in selecting those for extended notice, we are guided simply by their importance and general utility. Our advertising pages are open at reasonable terms to all inventors and holders of patents, but this department is entirely our own, and we must be pardoned if we choose to conduct it in the manner we deem best. If inventors desire a medium through which valuable inventions of a certain class are brought into public notice free of charge, they will aid us in this direction by subscribing to and advertising in the RAILROAD JOURNAL, but they should do so solely in a practical business way, not influenced by any feelings of obligation, while none exists upon their part so to do, nor upon our part to publish any description that is forwarded us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Tramways, Machinery, Etc.

BEARING DATE OF MARCH 13, 1883.

- 273,699. Device for Converting Motion: Geo. J. Altham, Swansea, Mass.
- 273,700. Car-Coupling: Ichabod Andrews, Dundee, N.Y.
- 273,711. Lantern: Frederick Dietz, New York.
- 273,735. Rail-Joint Fastener: George F. Hoeffler, Chicago, Ill.
- 273,736. Car-Coupling: Thomas B. Howe, Scranton, Pa.
- 273,753. Apparatus for Washing out Locomotive Boilers: Jas. T. McKenna, Reading, Pa.
- 273,762. Car-Brake: Henry S. Parmelee, New Haven, Conn.

- 273,785. Railroad-Switch: Frederic C. Weir, Cincinnati, Ohio.
- 273,786. Brace for Railway Switches and Rails: Frederic C. Weir, Cincinnati, Ohio.
- 273,818. Car-Coupling: Gordon S. Conover, Freehold, N. J.
- 273,837. Car-Spring: Walter P. Hansell, Pittsburgh, Pa. assignor to the French Spiral Spring Company, same place.
- 273,839. Stop-Valve: Thomas Hennessy, Oakland, Cal.
- 273,846. Valve-Gear for Steam-Engines: Geo. L. Hoxsie and Ezra Hoxsie, Halloway, Mich.
- 273,865. Railroad-Switch: William McCall, San Francisco, Cal.
- 273,871. Nut-Lock: Charles W. Meason, Walnut, Kans., assignor of one-half to James M. Goff, same place.
- 273,872. Hydraulic Jack: Oliver H. Mechem, Connellsville, Pa., assignor of one-half to John E. Sampsel, same place.
- 273,876. Mechanical Movement: Chas. Monson, New Haven, Conn.
- 273,882. Railroad-Rail Joint: John W. Ollis, Joliet, Ill., assignor to himself, and William W. Bishop and Paul Smith, same place.
- 273,891. Balanced Slide-Valve: Warren T. Reaser, Madison, Wis.
- 273,892. Balanced Slide-Valve: Warren T. Reaser, Madison, Wis.
- 273,894. Jack-Screw: Benjamin F. Reeves, Tuckahoe, N. J.
- 273,896. Car-Coupling: David J. Rumbaugh and Jacob S. Brandt, Cridersville, Ohio.
- 273,903. Car-Coupling: Jeremiah Showalter, Okonoko, W. Va., assignor of one-half to Adam Barth and Denton Barth, Oldtown, Md.
- 273,907. Car-Coupling: Lorenzo Stebbins, Hinsdale, N. H., and George P. Stebbins, Vernon, Vt.
- 273,922. Railway-Car: Jno. E. White, Cleveland, Ohio, assignor to Henry A. Coit, Concord, N. H.
- 273,923. Permanent Way of Railways: James Whiteford, Greenock, County of Renfrew, Scotland.
- 273,928. Car-Axle Box: Calvin M. Wood and Roldo M. Wood, Healdsburg, Cal.
- 273,929. Balanced Feed-Water Regulator: Jos. Woodruff, Rahway, N. J.
- 273,949. Car-Coupling: Ephraim D. Cain, Winigan, Mo.
- 273,950. Car-Coupling: Edwd. S. Carter, Keokuk, Iowa.
- 273,951. Rotary Engine: Charles P. Case, Horseheads, N. Y., assignor of one-half to G. F. Tomlinson, same place.
- 273,961. Balanced Slide-Valve: Eugene T. Conrad, Cadillac, Mich.
- 273,973. Safety-Guard for Car-Trucks: Chas. T. Emerson, Lawrence, Mass.
- 273,991. Car-Axle Lubricator: Charles P. Holmes, Gouverneur, N. Y.
- 273,999. Engine-Valve Governor: Samuel E. Jarvis, Lansing, Mich.
- 274,015. Car-Brake: Henry Mooers, Toledo, Ohio.
- 274,023. Electro-Magnetic Car-Brake: Harvey S. Park, Henderson, Ky.
- 274,024. Road-Engine: Franklin D. Pierce, Buffalo, N.Y.
- 274,025. Nut-Lock: I. P. Pillsbury, Monmouth, Ill., assignor to the Pattee Plow Company, same place.
- 274,043. Automatic Car-Brake: Benjamin F. Smith, Alabaster, Mich.
- 274,054. Oil-Can: John C. Thickins, Hinsdale, Mass.
- 274,063. Car-Ventilator: James Walker, Wyoming, assignor of one-half to Robert C. Maxwell, Cincinnati, Ohio.

## Automatic Car-Coupler.

U. D. MUSSEY OF RENO, NEVADA, PATENTEE.

THIS invention consists of a draw-head, in which is the usual chamber provided with a flaring face. In its bottom is made an aperture, the front wall of which is vertical, while the rear wall is beveled from the rear downward. The top of the draw-head is provided with another aperture, the rear wall of which it curved. The front wall is inclined from the inside or lower edge backward, forming a point



and thence forward in a concave curve, ending in a convex curve.

The latch consists of two arms extending about at right angles and meeting at their bases in a hub, the outer face of which is rounded and fits in the concave curve of the front wall of the second aperture. This latch is hinged in the front of the said aperture by a pivot through the walls of the draw-head and through the hub. The operation of the latch is as follows:

When the link enters at any point within the flaring front of the draw-head it strikes or is directed against the front of the first arm. This is pushed back and up upon the pivot, the latch turning on its curved base in its bearing and throwing the arm up out of the second aperture. When the link has passed the arm the latch returns to position, the arm falling through the link and the other arm returning within the aperture. The strain is resisted by the first arm which has two points of impingement—namely, one below against the front wall of the first aperture and one above and against the front wall of the second. The point fitting in the notch lends support to the latch and resists the strain upon the link. It also prevents the latch, should the pivot-pin work out, from working up through the aperture in the top of the draw-head. The device is controlled and operated from the top of the car by a mechanical arrangement.

#### Permutation Door-Lock.

M. KAUFMAN, in conjunction with Chas M. Schwartz and Wm. Carter, were granted a patent recently on a "Permutation Door-Lock," which is a marvel of ingenuity. It is a lock without a key, and can therefore not be opened with skeleton or false keys, or keys from other doors. This obviates also the necessity of weighing oneself down with carrying keys, or losing and misplacing them just when mostly needed. As doors are locked from the inside to keep people from coming in, and not from going out, so this lock is always open on the inside and locked on the outside. The advantage of this, in case of fire or other emergencies, seems very apparent. And while the door always readily and noiselessly opens to him acquainted with the permutation, and almost, if not quite, as quickly as an ordinary door when not locked, an alarm rings instantly and with every touch of the knob when others endeavor to open the door.



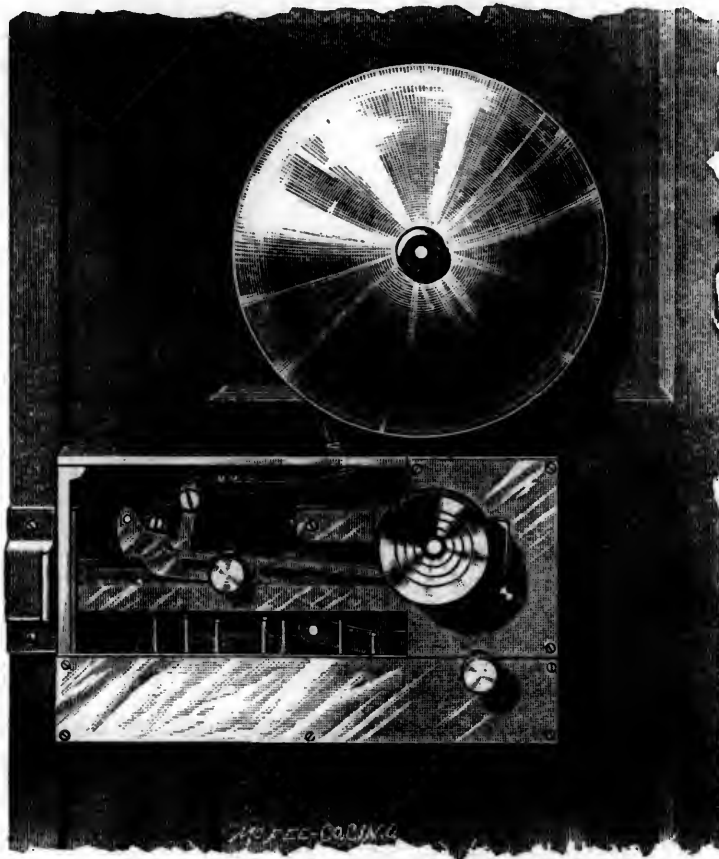
AS IT APPEARS ON THE OUTSIDE OF DOOR.

The lock seems to work upon the principle of the combination safe lock, save that where on the safe the hands and eyes have to be brought into requisition together, the hand alone

performs the work on the door. The combination can be changed in a moment, whenever desired, and is so simple that it can be taught to any one in a moment. The knob answers the double purposes of opening the door and the ordinary door-bell.

We predict that this lock will revolutionize the lock trade in the whole country; for in our

Besides this, it seems to us, that this lock can be used in every room, closet or out-house about the premises, and the great convenience enjoyed of not carrying a single key. One may go down town to his "lodge" without fear of being locked out, and the children can lose the keys no longer, nor try those from other doors. There is no doubt in our mind, that, when



AS IT APPEARS ON INSIDE OF DOOR WITH PART OF CASE REMOVED TO SHOW THE WORKS.

opinion it is as sure to ultimately find its place on every door as the combination safe lock has displaced every other lock, and the stemwinder is preferred to other watches.

In our boyhood days the safety of a lock was computed by the size of the key, while now the nearer to no key the key approaches, the safer and more desirable the lock seems to be. We repeat that the "Permutation Door Lock," just patented by these gentlemen, will be the lock of the future.—*Lexington (Ky.) Press*.

We desire to add to the above, copied from the *Press*, of Lexington, Ky., where Mr. KAUFMAN resides, that we see no reason why this lock is not destined also to supersede all other locks on passenger, mail, express, baggage or sleeping cars. To be able to place passengers in a car and lock them up in it, without really locking them up, has long puzzled railroad people. No passenger wants to be imprisoned in a car, and no railroad company can afford to permit this; and yet they have every reason in the world to retain passengers in the special cars in which they were first placed, and none why they should not be. This lock seems to overcome every objection; for though to all intents and purposes the passengers are securely locked in (for when they leave their car they can't get into the next one, nor back again to their own), they are not so fastened in that they cannot come out at will. To the train authorities alone the doors open readily from the outside.

this lock is once introduced and its virtues generally known, it must come into universal use, as predicted by the *Press*.

#### The "Hook" Water-Wheel.

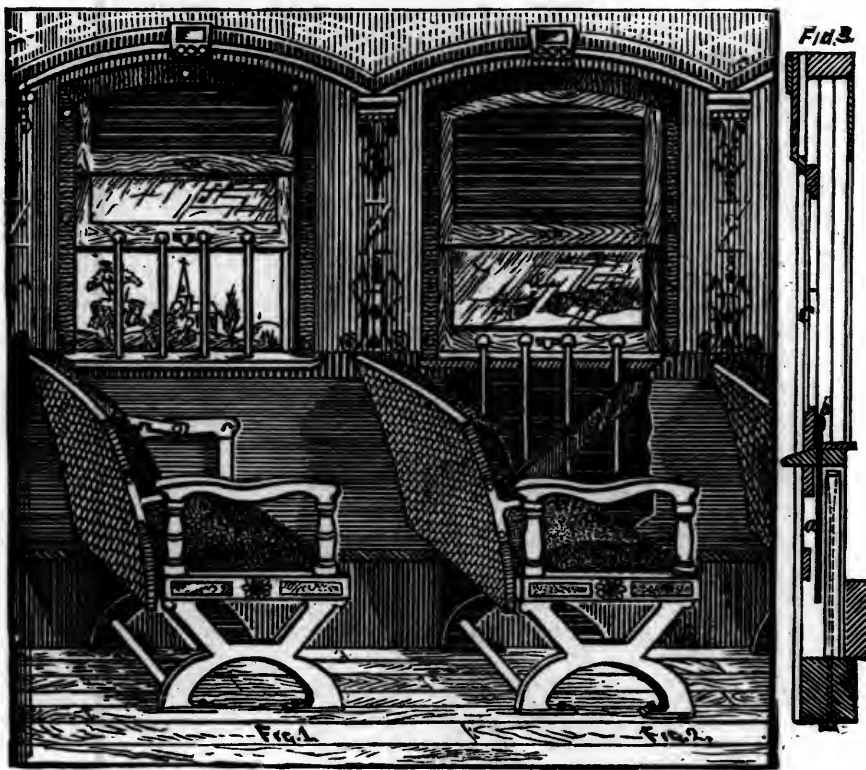
In order to more fully utilize the power of the water, Mr. DANIEL M. HOOK, of Columbia, South Carolina, has invented certain improvements in water-wheels. They are protected by letter-patent, and consist in placing one wheel below another in a common casing, and providing an intermediate water-way to direct the water from the first to the second wheel in the proper direction to render its force most available. Both wheels are turbine and have a stationary water-way between them. The wheels are carried by independent shafts, one encircling the other. While the principle of placing one wheel below another so that the lower one shall be driven by the water escaping from the upper and smaller wheel, the wheels mounted upon independent shafts, is not new, it is believed that up to the period of Mr. Hook's invention, the wheels have been arranged to run in reverse directions and have not been furnished with an intermediate water-way. Moreover, previous to Mr. Hook's invention, two or more wheels have been secured to the same shaft at intervals with intermediate water-ways; but since, in these cases, the first wheel turns or naturally would turn faster than the others, because of having the first and full

force of water, it follows that the other wheel or wheels will turn in dead water, and thus retard instead of assisting the first wheel. Readers understanding water-wheels will readily apprehend both the novelty and the value of Mr. Hook's invention.

### Railway Safety Window-Guards.

A. D. CHANDLER, OF ST. JOHNSBURY, VT., PATENTEE.

THIS device, an illustration of which is furnished herewith, consists of a number of rods which are attached to the lower sash of car windows, and pass through the inside sill. By this attachment the windows cannot be raised without drawing the rods up before the opening, and thus the passengers are prevented from putting their heads and arms out of the windows and exposing them to contact with



CAR WINDOWS OPEN AND CLOSED SHOWING GUARDS IN POSITIONS.

poles or switches that may be erected in close proximity to the tracks. The guards do not interfere with the working of the blinds and can be attached to any car old or new. They are made of brass tubing  $\frac{1}{4}$  or  $\frac{3}{8}$  of an inch in diameter, and being nickel-plated, are at once strong, light and ornamental. The rods do not pass through the brace, but between the brace and outside partition, consequently they will not come in contact with anything, and the window can be raised and lowered as quickly and as readily with as without them. The inventor calls particular attention to the fact that the rods are attached to the lower sash of the window and pass through the sill on the inside of the car, and consequently when the window is raised the rain cannot run down through the holes, as it would in case the rods were attached in under the lower sash, and also that when the window is down, and the outside of the car is being washed, the water cannot back up in under the sash and pass down the holes, as would be the case if the rods were attached under the sash.

### Car-Coupling.

JOHN W. ALEXANDER, NEW YORK, PATENTEE.

THIS device consists of a draw-head open upon the top and front, with an interior pocket of a spherical shape. The draw-bar is a rod with globular extremities, these extremities fitting in the pockets of the draw-heads with sufficient tightness to prevent their exit from the opening in front, while adequate play is allowed to accommodate the lateral motion of the draw-heads. The draw-bar is dropped in the pocket of the draw-head from above and is held in position by a moveable slide or guard closing the upper orifice of the pocket. At the same time provision is made by a lower and supplementary pocket for the use of the ordinary link and pin coupling in case of contingencies arising which prevent the use of the

### TO INVENTORS

—AND THE—

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Parties having New Patents of any description, which promise to be of value to the Railway trade, are cordially invited to correspond with the undersigned. My practical experience in all details of the trade enables me to judge promptly whether new patents really deserve to be classed among the improvements or not, and advice will be freely and frankly given in every case. When found to possess real merit I will be pleased to assist the inventor or owner in bringing the articles into use.

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Trusting, after due consideration of the above matter, you may deem proper to communicate with the undersigned, I remain, awaiting your further pleasure,

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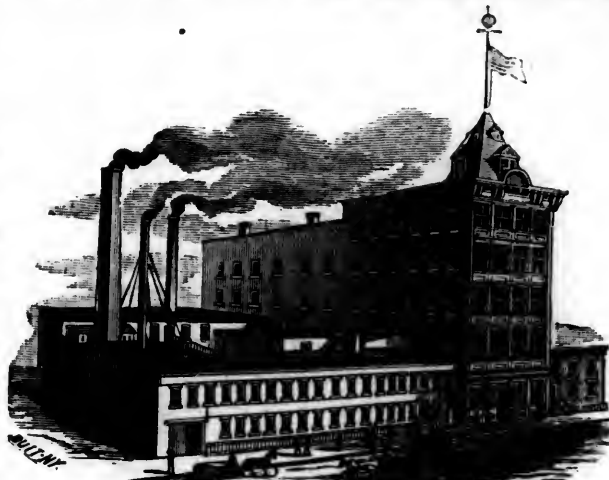
THE UNRIVALLED PRODUCTION OF THE E. M. BOYNTON SAW AND FILE COMPANY—THE RECENT RE-ORGANIZATION.

FOR a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. BOYNTON, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" law, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion; the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth

Not one in a thousand failed to give satisfaction.

The First Award of Australia has been added to the Centennial Awards.

The 12-inch log at bottom of this picture was sawed off by two men by hand in 7 seconds before Commissioners of every country and the Emperor of Brazil.



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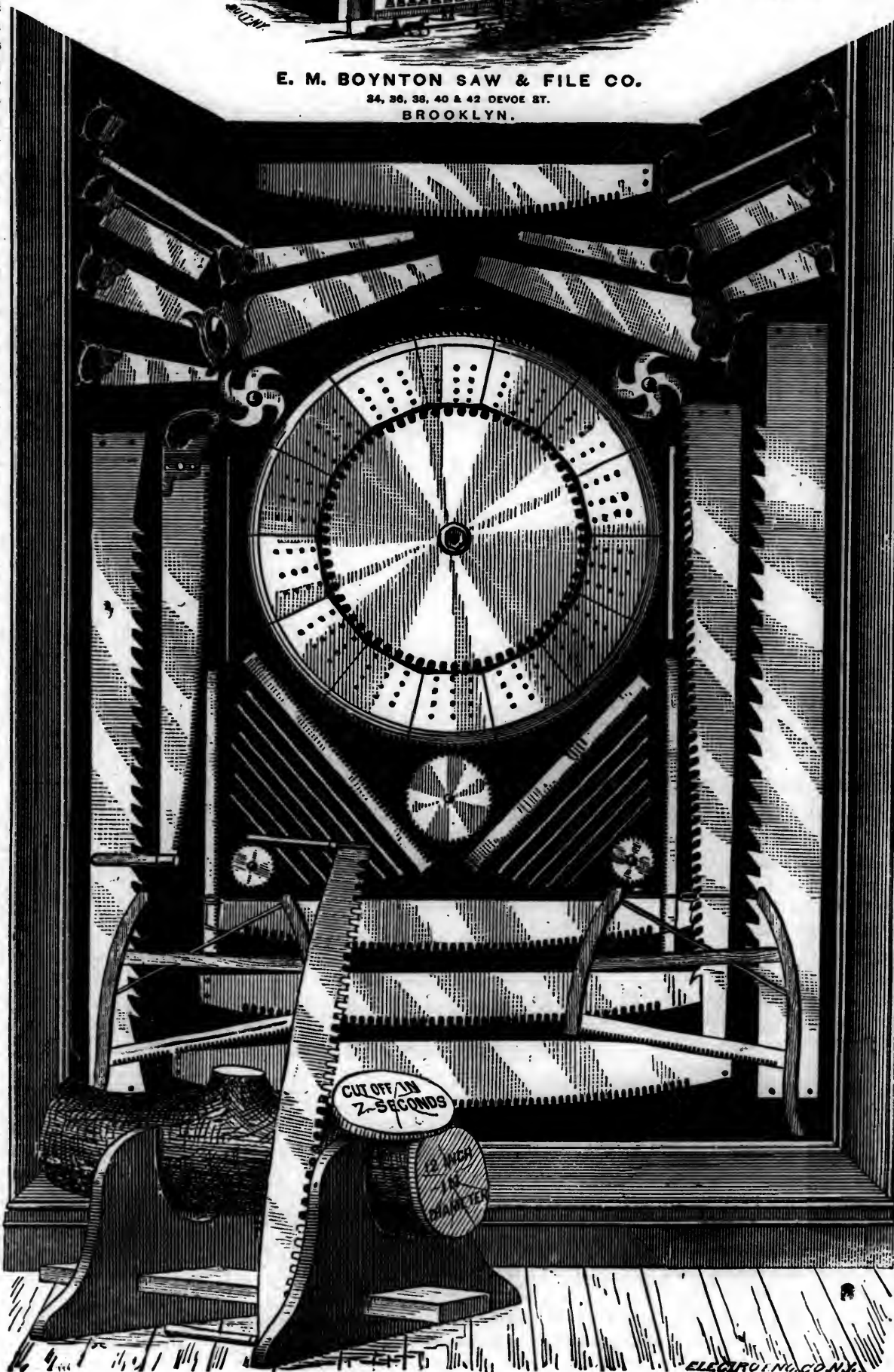
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N. Y. CITY,

WHERE A FULL ASSORTMENT OF  
SAWS, FILES,  
AND TOOLS,  
ARE KEPT.

edge being given with whetstone—saving of friction, as well as files, steel, strength and time. 3d. Doubleteeth—are stiffer, less vibration. 4th. Consequently, may be and are gummed longer, saving expense and frequent repairs. 5th. Are stronger than any other. 6th. Directcutting (upwards) avoids grit, divides resistance, relieves the pressure and wear on point of teeth—avoiding the grinding, weighing and clogging of old style saws. 7th. No waste of power, as in the old scratching system, the cutting being direct, uniform, economical and continuous. 8th. In direct cutting, edge holds longer than if dragged over the timber. 9th. It is the front cut of the hand saw cutting both ways. 10th. This saw cuts with less friction, much easier and faster than any heretofore known, while more simple than any other patent saw. The "Lightning" combines the two principles in one tooth. One point of M follows while the other is cutting, which regulates the feed, and enables the teeth of the plow or vertical form to be used for both cross cutting and slitting. This patent tooth is as simple as any hand-saw tooth to sharpen. Boynton's saws were effectively tested before Judges at the Philadelphia Fair, July 6 and 7. An ash log, eleven inches in diameter, was sawed off, with a four foot "Lightning" cross-cut, by two men, in precisely six seconds, as timed by the Chairman of the Centennial Judges of Class 15. The speed is unprecedented, and would cut a cord of wood in four minutes. The representatives of Russia, Austria, France, Italy, Spain, Belgium, Sweden, England and several other countries were present, and expressed their high appreciation. Many of the leading saw manufacturers of the world were present, but not one accepted Mr. Boynton's \$1,000 challenge. The M principle is applied to saws of various kinds and for all sorts of purposes. In consequence of the practical value of the patents taken out by Mr. Boynton the earnings of the factory have multiplied five-fold in five years, and there is no doubt that an even more rapid growth will be recorded in the future.—*New York Scientific Times and Mercantile Register*, Feb. 3, 1883.

This Company also manufactures the **Noon-Day Stove Polish**, so rapidly coming into favor.



ELECTRIC CO. N.Y.

# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Tramways.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 1.]

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matters generally, Mining, Banking, Finance and Manu-  
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tisements should be sent to the "AMERICAN RAILROAD  
JOURNAL CO."

We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing us with  
any items of news which may come to their knowledge,  
and are of a suitable nature for our columns. It is our  
intention to publish weekly full and accurate informa-  
tion regarding those enterprises and industries to which  
the AMERICAN RAILROAD JOURNAL is devoted, and to  
effect this end we solicit the co-operation of readers in-  
terested therein. We aim specially to record all new  
railway enterprises in the United States and Canada,  
and to note the progress of construction on all new roads  
and extensions; and we request those concerned in rail-  
way building to give us early information concerning  
the above, that our reports may be as complete as pos-  
sible.

Correspondence and contributed articles are also re-  
quested for our special departments devoted to Finance,  
Commerce, Street Railways, and New Inventions. All  
communications should bear the name and address of  
the writer, not necessarily for publication, but to insure  
the editor's attention.

### RELATIVE SPEED OF AMERICAN RAILWAY TRAINS.

IT is commonly thought that American rail-  
ways are behind those of other countries  
in the question of speed, and a belief prevails  
that English trains are much more rapid than  
our own. It is difficult to see just why this  
statement has been circulated and gained gen-  
eral credence, for the truth is far different.  
American railway trains maintain a higher rate  
of speed in long distances than those of any  
other country. English trains, it is true, in  
running short distances, do eclipse the speed  
made in this country, but this speed is not  
maintained in long journeys. There is one train  
running between Liverpool and Manchester,  
a distance of about thirty-five miles, which ac-  
complishes the journey in a little less than half  
an hour, showing an average speed of seventy-five  
miles an hour for that distance, but there is no  
case where an English railway can equal our  
best time on long distances. So far as the  
trains upon Continental railways are concerned,  
the same holds true to even a greater extent.  
In France there are some express trains which  
maintain a moderately high rate of speed, but  
the ordinary time made upon French railways  
is much slower than upon American. The rail-  
ways of Germany run their trains with exceed-  
ing deliberation and in Italy they are abomin-  
ably slow. The railway system of Russia, though  
of late making great advances, is as yet but in  
its infancy, and no just comparison in this  
respect may be made.

An analysis of the facts as above stated shows  
that American railways lead those of all other  
countries in speed on long distances, but falls  
behind many in short trips between adjacent  
town and cities. Our railways show wonderful  
zeal and energy in reducing the time of express  
trains between New York and Chicago or be-  
tween other cities of importance equally dis-  
tant from each other, but are singularly indif-  
ferent as to the time made between points in

close proximity. We confess the reason for  
this one-sided progressiveness is not clearly  
apparent to us. It may safely be presumed  
that the majority of passengers traveling be-  
tween far distant points determined upon per-  
forming the journey some time before, and  
have made their preparations accordingly.  
While they are justified in demanding that they  
be carried to their destinations with a reason-  
able dispatch, the occasions are comparatively  
rare when the difference of an hour or two can  
be of any vital importance, for in calculating  
upon long journeys all travelers will make al-  
lowances for detentions and delays, and are  
fully prepared to meet with a loss of time.  
No such allowance is ordinarily made in travel-  
ing short distances, and these journeys are  
frequently performed at quick notice and un-  
der circumstances that render every moment  
of the utmost importance. With these facts  
in view we cannot see the justice of sacrificing  
the time of local trains to facilitate the increase  
of speed upon fast mails and expresses. Many  
railways in this country will keep a local train  
upon a siding for half an hour in order that an  
express train that has been delayed may have  
a clear track on which to redeem the lost time;  
and so common has this custom become upon  
roads maintaining an extensive through traffic,  
that the local train schedules are wholly unre-  
liable. Passengers are compelled to wait irres-  
pective of the time tables and the cases are nu-  
merous where intended connection with boats  
and trains at their destinations are missed in-  
consequence.

Far be it from our intention to discourage  
the running of fast express trains which in a  
country of such vast extent as America, are  
an absolute necessity; but there is no reason  
why the comfort and convenience of local  
travelers should be disregarded in order to ac-  
complish this end. Fast trains are generally  
the outgrowth of rivalry between competing  
roads and a little of this spirit of competition



might be exercised in reducing the time between adjacent points. In this respect we might follow the example of English railways to some extent and make a special feature of rapid trains between places in close proximity to each other, while the same speed could be maintained upon through trains as before. Such an accomplishment might be more difficult in this country than in England, for there the greatest distances between points on railways is very small compared to those upon our roads where miles are reckoned by thousands, but the energy and progressiveness of our railway managers should not be daunted by the problem. The maintenance of a high rate of speed upon all trains can be accomplished with perfect safety by the exercise of care and watchfulness, and there is no reason why one class of passengers should be benefitted at the expense of another. The increase of the facilities and conveniences of local travel results in an increase of population in adjacent towns, forming a steady and reliable source of income to the railway companies, while a neglect of these facilities will, as we said a week or two ago, discourage the growth of places that are adapted for the residence of persons doing business in the central cities.

#### THE FATHER OF THE RACE.

VISITORS at the Chicago Railway Exposition may be attracted by the display of surprising inventions, they may be dazed by the vastness of the exhibits and the number of appliances for the furtherance of improvements in railway travel, but the center of attraction, the one spot toward which the feet of antiquarians will turn, is that corner of the exhibits of old curiosities, where GEORGE STEPHENSON'S "Rocket" will be displayed. This venerable relic, the first practical locomotive ever produced, will bear the same relation to the exposition that the bones of Adam would to an ethnological collection. It is the father of the locomotive race, and it represents the indomitable energy of one man, who in the face of every discouragement and obstacle, revolutionized the traveling methods of the world in less than a quarter of a century.

There are few persons now alive who have seen the "Rocket" in actual travel, but it has for years been the object of the greatest veneration and curiosity at the South Kensington Museum in London, the directors of which have kindly loaned it to the American Exposition, and the name of the engine has been a familiar word to almost every school boy. It is difficult to imagine a locomotive whose weight was less than five tons, with a cylindri-

cal boiler but six feet in length, and three in diameter, yet such was the "Rocket," constructed by STEPHENSON in competition for the £500 prize on the Liverpool and Manchester Railway. The directors fixed upon these limits of dimension, and the "Rocket" carried off the prize. Nor were its performances by any means contemptible in comparison with those of the ponderous locomotives of the present day, for the little "Rocket," when subsequently improved, could maintain a speed of thirty miles an hour, and it was many years before this rate was excelled.

The history of railway progress does not present an unimpeded march to triumph. The elder STEPHENSON and his son Robert, fought for the carrying out of their ideas with the persistency of an early Christian martyr. Bitterly opposed by the railways themselves, who clung with tenacious fondness to horse traction they proceeded in the face of threats and discouragements that would have daunted men of ordinary pluck and courage. The old coach companies were their relentless foes. Rich landlords and their powerful tenantry foresaw the demolition of their farm lands, and called upon Parliament to protect their rights. The wierd uncanny engines flying past in clouds of smoke and steam aroused the dread and superstition of the lower classes, and a universal terror prevailed at the thought of the general introduction of steam railways. The passenger coaches upon the early railways of England continued to be drawn by horses, for no traveler of those times would have deemed himself safe behind a mysterious engine which could propel itself and a train of cars, and the first locomotives were devoted exclusively to the transportation of coal and freight. So universal was the prejudice against the introduction of locomotives that the committee of the Liverpool and Manchester Railway could only obtain their charter upon pledging themselves not to ask for any clause empowering them to use locomotives upon their road, and as late as 1829, the charter of the Newcastle and Carlisle Railway was only granted upon the express condition that its cars should be drawn by horses only.

Nothing daunted, STEPHENSON threw his soul into the task before him, and fought his measures through Parliament until the steam railway became the leading avenue of English travel. It is related of him, and the anecdote illustrates the rugged energy of the inventor, that when a committee from the House of Commons on the subject of railway were interviewing him, one of their number propounded this question: "Mr. STEPHENSON, would it not be an awkward thing for an en-

gine to run over a cow?" "Yes," answered the blunt inventor, in his dry Northumbrian dialect, "it would be very awkward for the cow." This "Father of Railways," as he has been aptly called, lived to see his country netted with iron rails, and was himself honored with the homage of the British nation, while his son, Robert, a worthy descendant of his illustrious father, followed in the latter's footsteps, and accomplished the greatest engineering feat of his day in devising and constructing the Victoria Bridge at Montreal, the vast structure spanning the rapid waters of the St. Lawrence from the Canadian metropolis to the opposite shore. Both father and son were workmen in the truest sense. They did not content themselves with forming theories for others to work upon, but lent their personal aid to the actual work of construction. The elder for months almost lived upon horseback supervising the laying of tracks on the railways he had been instrumental in forming, and every drawing and specification were perfected by his own hands.

It is especially fitting that at the approaching exposition where the display of railway appliances will exceed anything hitherto produced, the first fruits of GEORGE STEPHENSON'S labors should be given the place of honor, and that the pioneer locomotive in all its simplicity should stand in close proximity to its legitimate descendant, the locomotive of the present day with its wonderful completeness and intricacy. In our News Department this week will be found a note concerning the progress of the exposition in which mention is made of the appearance of the "Rocket," and in our next issue we shall describe more fully the department of "Old Curiosities." Old and curious as may be the displays in this section of the exposition, they show but the legitimate growth of railway improvement during the last half century, and if in 1933 another exposition of railway appliances should be held, the locomotives and railway mechanism of the present day would present as marked a contrast to those of that period, and seem as uncouth and primitive as will STEPHENSON'S "Rocket" and the other curiosities at the Chicago display. For this reason we urge the permanence of the organization now superintending the exposition, with a view to reproducing it at intervals of a few years, thus showing the gradual growth of railway improvements, and affording inventors an opportunity to study the defects in the prevailing appliances and the immediate and pressing needs of our railway system. To us the system may now seem perfect but there is no limit to its ulterior improvement, and in fifty years the change will be so great that

the Stephensons of the present day will scarcely be able to discover the traces of their handiwork. By all means let the National Railway Exposition be a permanent institution, and a perpetual incentive to the production and perfection of new railway appliances and improvements.

#### THE FUTURE FIELD FOR RAILWAY CONSTRUCTION.

**A** GLANCE at a perfect railway map of the United States reveals the fact that railway facilities are quite abreast of the settlement and population of the country—especially in the new States and Territories. There are already more railways to the Pacific coast, completed or to be completed within the year, than the through business requires. When the traffic between the Pacific ports and the East shall have been cut into four parts by the completion of the Atlantic and Pacific, and later the Northern Pacific, the proportion belonging to each one will be small. In all probability, to prevent ruinous competition, the through business will have to be pooled, with an actual division of the tonnage, allowing passengers to select such route as they may prefer. It is true the western portion of each of the three southern-most lines is controlled in the main by the same owners, and undoubtedly their influence will be used to maintain remunerative rates. Were it not that each of these lines has gathered about it local industries, either of mining, grazing or agriculture, which will in time justify the construction, their prospect would be indeed dismal. The Northern Pacific, too, has at its two extremes a country well adapted to the growth of cereals; and at the western end valuable resources in timber and coal. Recent discoveries go to show that the Texas and Pacific, and the Atlantic and Pacific have also valuable coal-beds near their routes in New Mexico and Arizona, which will not only insure a carriage of large quantities for fuel, but also the cheaper operation of those roads.

What has been doing in reference to the Pacific railways has been done in reference to other localities. We have already three roads between New York and Buffalo, with a fourth (the Lehigh Valley) available for freight. The New York, West Shore and Buffalo is rapidly gaining headway, and will in the course of another year furnish a fifth line. At the same time, the Philadelphia and Reading and the Central of New Jersey are combining to establish an independent line to Pittsburgh in the West, and via Baltimore to the South and West. Three, and perhaps four, roads are nearing completion between Cincinnati, Louisville and

New Orleans. Three lines are nearly completed between St. Louis and Galveston. Three lines are in operation between Chicago and Kansas City, and five lines between Chicago and Council Bluffs. There are five lines, also, between Chicago and St. Paul, each of which is pushing further into the Northwest. The question arises: Is not the business overdone? Can the country sustain so many parallel roads? When Mr. VANDERBILT indirectly purchased the New York, Chicago and St. Louis Railway at a profit to the builders of some \$7,000,000 on an outlay of \$11,000,000, it was foreseen that great damage had been done to all railway property. If five per cent of the market value of railway stocks had been struck from all the railways in the country the injury would not have been more serious. The business of building railways to sell to railways, and not because of the demands from ordinary business, received direct encouragement which bodes ill to the future of railway business. As the largest owner of railway property in America it was Mr. VANDERBILT's duty to have fought his would-be rivals to the uttermost—or rather, true policy would have dictated that he should make his own roads and appointments the most perfect in the world, and so have made competition hopeless. That policy would have been equivalent to a notification to all interlopers that they embarked in the business of paralleling established roads at their own peril, and had only to expect a fight until one or the other of the parties was bankrupt.

Looking over the field of railway development, there remains no considerable area of fertile country within the United States domains which is not already sufficiently provided with railways, or in a near way of being so furnished. The filling up of branch feeding lines of existing systems is all that is left to do. American enterprise cannot push very far into Canadian territory, being barred by regions of perennial ice and snow. On the South, however, is the great Republic of Mexico, with abundance of good soil, a genial climate, running streams, mines of precious metals, and every element except that of an enterprising population and stable government, to encourage railways. The advent of railways will not only ensure a more compact political organization, but also inspire the native Mexicans with greater enterprise. The two conditions go together—for of what use is it to raise crops if they cannot be sent to market at a profit; and of what use is the profit if the laws cannot guarantee the possession and enjoyment of the property.

The present development of railways in Mexico is being watched attentively by all civilized

nations. Now that the United States has set the example, Europe is quick to follow it; and already England, France, Germany and Italy are pouring in capital and merchandise into that country. Twenty years will so revolutionize the face of Mexico that its old inhabitants will scarcely recognize it.

#### EDITORIAL NOTES.

Two of our editorial articles published within the past fortnight have provoked replies which will be found in the columns of Correspondence. One is a reply to an editorial in last week's issue, which contrasted the English and American railway systems. We appreciate the courtesy of tone this correspondent assumes and admit the truth of his remarks, but we cannot see that he has disproved our claim to general superiority for the American system, nor contradicted the leading points of the article in question. In regard to the comparative speed of English and American railway trains, we can best answer his argument by referring to the leader this week entitled "Relative Speed of American Railway Trains." Our other correspondent objects to a brief note we made on the subject of smoking cars. This gentleman is not altogether fair, although much that he says is true. According to the tenor of the latter part of his communication, we should suppose that it is his wish to do away with smoking cars altogether because he and others do not smoke. Surely ample provision is made on our railway trains for non-smokers, without curtailing the comforts of the tobacco fraternity. We wonder how "Commuter" would enjoy traveling in Germany where every railway train is provided with a single car bearing the words "for those who do not smoke."

In the list of patents published in our Department of New Inventions, there is noticed a weekly average of six car-coupling devices. This gives a yearly total of over three hundred inventions of the kind, and despite this large number the majority of roads cling to the old-fashioned link and pin coupler. We are at a loss to account for this apparent lack of enterprise on the part of railway managers in failing to adopt new methods and devices which are manifest improvements.

THERE is apparently an epidemic among the members of various State Legislatures in the matter of prohibiting free passes on railways. The Pennsylvania Legislature has just passed a bill forbidding their issue except for "charitable and benevolent purposes." We cannot perceive the exact object of this saving clause, and should imagine that charity will, as usual, cover a multitude of sins.



## NEWS DEPARTMENT.

[Items of information suitable for this department and especially those adapted for the columns devoted to the Organization, Incorporation, Construction and Consolidation of Railways, are earnestly desired from our readers.]

## CONSTRUCTION.

A ROUTE to shorten the distance between Pottsville and Shamokin was surveyed thirty-five years ago, and it provided for a 1,500 feet tunnel through a part of the Broad Mountain, and gave a total distance of thirty-two miles, with a maximum grade of seventy feet to the mile. Mr. R. A. Wilder, of Cressona, Penn., has recently surveyed this route with the result of shortening it to twenty-five miles, with a maximum grade of sixty feet to the mile. This route runs from Pottsville to Oak Hill and Dyers' Run, where a three-mile tunnel would have to be cut through Broad Mountain. The distance by the present route from Pottsville to Shamokin via East Mahanoy Junction is sixty miles. Mr. Wilder's route makes a saving in distance of thirty-five miles.

THE managers of the Georgia Pacific Railway report that in future their work of construction will be confined strictly to the section lying between Atlanta, Ga., and Columbus, Miss., the distance being some 300 miles, of which 168 miles are completed and running, while a portion of the remainder is graded and the work is progressing as rapidly as possible. Meanwhile the first mortgage bonds are issued by the Central Trust Company only on road actually finished at \$10,000 per mile, while it has cost over \$20,000 per mile.

THE Long Island Railroad Company purposes to file a map for the extension of the road from its present terminus in Brooklyn, at Atlantic and Flatbush avenues, along the latter thoroughfare to Fulton street, and thence in a straight line across private property to the Brooklyn terminus of the Bridge. The private property will be condemned under the General Railroad Act and purchased. The company will then build an elevated road from the Bridge to East New York, with four tracks.

At the annual meeting of the stockholders of the Bangor and Piscataquis Railroad Company, held in Bangor, Me., on the 21st inst., it was voted to reaffirm the votes of the stockholders at the meeting April 12, 1882, and instructed the directors to take the necessary steps for the completion of the road to Moosehead Lake. It was voted to accept the act of the Legislature extending the time for the completion of the road.

THE new route from St. Louis to San Francisco, via the St. Louis and San Francisco to Halstead, Kan., the Atchison, Topeka and Santa Fé to Albuquerque, New Mexico; the Atlantic and Pacific to the Needles, on the Colorado River, Arizona, and the Southern Pacific to San Francisco, is expected to be in complete operation May 1. This line will be 300 miles shorter than the present one via Deming.

L. AUSTIN SPALDING, of Lockport, N. Y., has contracted to build seven miles of the Panama Canal, and will receive about \$7,000,000 on the

completion of the contract. Four dredges and four derricks are now being built by the Pound Manufacturing Company, at Lockport, and will be shipped to Panama about the 1st of May, when the work will be begun. Mr. Spalding is now in New York.

THE chief engineer of the Baltimore and Ohio Railroad, commenced a preliminary survey of the Valley Railroad on the 22d inst. A despatch from Middletown, Md., says that the suggestion of building the road by the levying of a tax of eight cents on the hundred dollars is meeting with more favor every day, and there is a bright prospect ahead.

THE White River branch of the St. Louis and San Francisco Railway was opened on the 24th inst., between Ozark and Sparta, a distance of eight miles. The line is now completed twenty-eight miles from Springfield, Mo., and the work of construction toward Harrisonville, Ark., is still progressing. Harrisonville is 100 miles southeast of Springfield.

A CONTRACT has been let for a branch line of the Addison and Northern Pennsylvania Railroad, which is to run from Davis station, near Gaines, Pa., southeast through Ben Gully to some coal mines. This branch will be about six miles long. Work is to be begun at once and finished in thirty days.

THE Cincinnati and Eastern Railway will be made a standard-gauge and connect with the Chattaroi Railway at Ashland, Kentucky. The latter will be extended to join the Norfolk and Western Railroad, which will give Cincinnati another through line to the sea and the South Atlantic States.

THE Richmond and Danville Railroad Company is fast extending the Western North Carolina Railroad to Ducktown, and will ultimately extend it to Chattanooga, Tenn., having been relieved by the Legislature of the necessity of building it to Murphy.

WORK has been begun on the International road in Maine, near the Quebec border. The contracts let call for the completion this year of the road from the present terminus at Lake Megantic, P. Q., to the Maine State line, about fifteen miles, and of a section of twenty miles in Maine.

THE engineers of the Indiana, Bloomington and Western Railway Company, at work surveying a route for the St. Louis extension of the road from a point nine miles east of Decatur, Ill., have reached a point near Pana. The work will be pushed forward rapidly.

FUNDS enough have been subscribed to build the Sanford and Eustis Railroad, from Sanford to Wekiva, both in Orange county, Florida, a distance of twelve miles. The line will be extended to Ocala, in Marion county.

At a meeting held in Dover, Penn., on the 24th inst., to consider the feasibility of the proposed railroad from York to Dillsburg, enough money was promised to make the construction of the road probable.

THE Mojave branch of the Southern Pacific Railroad is 157 miles east of Mojave station. It will be thirty days before the Colorado River will be reached. Three thousand Chinamen are engaged on the front.

THE track on the Carson and Colorado Railroad has been laid from the late terminus at Benton, Col., southward fifteen miles, and the grading is finished for fifteen miles further.

THE New York, Lake Erie and Western Railroad Company are now surveying a line for the proposed railroad through the salt field recently discovered in the vicinity of Warsaw.

THE Philadelphia and Reading Railroad Company contemplate putting down a third track on the Lebanon Valley Railroad, between Reading and Harrisburg.

THE track on the extension of the York and Peach Bottom Railroad will probably be laid to Peach Bottom, in York county, Penn., by the 1st of June next.

THE new Michigan and Ohio Railroad, from Toledo, Ohio, via Marshall, to Allegan, extending 154½ miles, will be in operation by June 15.

THERE are now but thirty miles to be constructed to complete the Denver and Rio Grande Railway between Salt Lake and Denver.

THE first train over the Northern Pacific Railroad reached Bozeman, Montana, on the 22d inst.

## ORGANIZATION.

At the annual meeting of the stockholders of the Portage, Westbourne and Northwestern Railway Company, held at Winnipeg, Manitoba, on the 23d inst., the following directors were elected: Andrew Allan and A. T. Drummond, of Montreal; Duncan MacArthur, F. H. Brydges, W. L. Boyle and H. N. Rutlan, of Winnipeg; Edgar Dewdney, of Regina, and B. H. Buckstone and Fox Warren, of England. It was resolved to increase the capital stock to \$5,000,000 and to vigorously prosecute the work of construction from Gladstone, the present terminus. The directors elected the following officers: Andrew Allan president, Duncan MacArthur vice-president, F. H. Brydges, secretary and treasurer.

At the annual meeting of the stockholders of the Bangor and Piscataquis Railroad Company, held at Bangor, Me., on the 21st inst., the following directors were chosen: Albert G. Wakefield, Thomas S. Moor, Chas. L. Marston, John Cassidy, Moses Giddings, Wm. B. Hayford, Asa D. Thompson, M. S. Drummond, John S. Ricker, Wm. H. Strickland, Joseph S. Wheelwright, of Bangor; Alex. M. Robinson, of Dover; and Josiah B. Mayo, of Foxcroft. At a subsequent meeting of the directors Moses Giddings was chosen president, Arthur Brown superintendent and H. W. Blood treasurer.

THE first annual meeting of the Pottsville and New York Railroad Company was held in Pottsville, Penn., on the 20th inst., at which the following directors were elected: R. A. Wilder, Cressona; Walter C. Sheaffer and Mason Weidman, Pottsville; John C. Beck and Daniel Boyer, Orwigsburg; Charles Wiltrout, Schuylkill Haven; Daniel Dechert, Cressona; and Charles V. Ware, New York. The officers are: R. A. Wilder president and general manager, Charles V. Ware treasurer, W. Leslie Sheaffer, secretary.

THE purchasers of the late Western Railroad

of Alabama have organized a new company under the name of the Western Railway of Alabama, and fixed the capital of the same at \$3,000,000. The following gentlemen were elected directors: W. G. Raoul, Chas. H. Phinizy, and Dr. Hamilton, of Georgia; M. H. Smith, of Louisville, Ky.; Thomas G. Jones and Henry O. Semple, of Montgomery, Ala. L. R. Grant president, M. H. Abbott secretary and treasurer.

The following gentlemen have been elected to fill the vacancies in the board of directors of the Columbus and Northwestern Railroad Company: James C. Baker, Mechanicsburg; David Bowersox, Sidney; T. J. Godfrey, Celina; Lemuel Weaver, Henry T. Niles and John S. Leedom, Urbana.

The directors of the Newport and Cincinnati Bridge Company have elected Thomas D. Messler president, A. S. Berry, vice-president, S. B. Liggett, secretary, Wm. Davidson, of Pittsburgh, treasurer. A dividend of three per cent was declared, payable April 1.

### INCORPORATION.

The articles of incorporation of the Council Bluffs and Northern Railroad Company were presented at a meeting of the citizens of Council Bluffs on the 22d inst., and adopted, and directors and officers elected. The directors are: J. W. Chapman, J. J. Brown, Samuel Haas, E. L. Shugart, Thomas Bowman, J. T. Hart, and J. M. Palmer, all residents of Council Bluffs. The board elected the following officers: President, J. W. Chapman; vice-president, E. L. Shugart; secretary, Thomas Bowman; treasurer, Samuel Haas; general manager, J. J. Brown. The latter has been a railroad builder in the West for twenty years, and aided in the construction of nearly all the railroads in Iowa and Nebraska. The capital stock of the company is \$1,000,000, and may be increased at the will of the directors. The road is to extend from Council Bluffs to Storm Lake, and thus form a new diagonal road. It will run through the best part of Northwestern Iowa, will traverse a rich agricultural region not hitherto touched by railroads, and take in a number of towns on the way. A corps of engineers is now engaged in the preliminary survey.

Articles of incorporation were filed in the office of the Secretary of State of California, on the 16th inst., of the Turlock and Sierra Nevada Railroad Company. The directors are: Geo. Howard Thompson, of San Francisco; B. H. Deane, George C. Deane, H. H. Russell and J. W. Bost, of Merced county. The capital stock is \$300,000, divided into 3,000 shares. B. H. Deane is president, J. W. Bost secretary, and H. C. Russell, secretary of the company. The principal place of business is Turlock. The object of the company is to construct and operate a railroad of the standard-gauge, and a telegraph line, beginning at the town of Turlock, Stanislaus county, and running thence in an easterly direction to Merced Falls, a distance of about thirty miles. The proposed road runs through a rich agricultural region and terminates at one of the largest flouring mills in that portion of the State.

### PERSONAL.

The Chicago, St. Louis and Pittsburgh Railway Company will take possession of the Columbus, Chicago and Indiana Central Railway on the 2d of April. The following are the officers: Wm. L. Scott, president, J. N. McCullough, first vice-president, office Pittsburgh, Pa.; Wm. Thaw, second vice-president, office Pittsburgh, Pa.; Thos. D. Messler, third vice-president and comptroller, office Pittsburgh, Pa.; M. H. Taylor, treasurer, 160 Broadway, N. Y.; S. B. Liggett, secretary, Pittsburgh, Pa.; A. Stull, assistant secretary, 160 Broadway, N. Y.; James McCrear, manager, Columbus, O.; J. T. Brooks, general counsel, Pittsburgh, Pa. J. J. Brooks, assistant counsel, Pittsburgh, Pa.; First vice-president McCullough has appointed D. T. McCabe, general freight agent; E. A. Ford, general passenger and ticket agent *pro tem*. Their official addresses will be at Chicago, Ill. Second vice-president Thaw has appointed M. C. Spencer, assistant treasurer, office at Pittsburgh, Pa.; and John C. Snee, paymaster, with office at Columbus, Ohio. Comptroller Messler has appointed John W. Renner assistant comptroller and A. McEvey auditor, with offices at Pittsburgh.

CHAS. A. HASLETT has been appointed superintendent of the Texas Division of the Texas Continental Transportation Company, vice Geo. M. Shattuck, resigned. Mr. Haslett's headquarters will be at Houston, Texas. The appointment is to take effect April 1. The Texas Division embraces the State of Texas, and also extends east as far as New Orleans, La.

### How Preparations Progress for the Railway Exposition.

ATTENTION is again called to the coming National Exposition of Railway Appliances, by the announcement of the fact that Stephenson's Rocket, the first practical locomotive built, has been secured for the exhibit of "Old Curiosities." This locomotive has for several years been preserved in the museum at South Kensington, Eng., where, elevated on a pedestal, almost as uncouth, but far more powerful than a Hindoo god, it is one of the important objects of attraction and interest to all intelligent visitors. It is fitting indeed that this almost sacred relic should be brought to this vast inland city of the western world, for it marks, and was itself the first successful application of that power which has made the settlement of the great west and the present development of Chicago possible.

In view of the unexpected and wholly unprecedented demand for room by those who desire to exhibit, the board of commissioners have decided to add largely to the floor space of the present building, and also to erect an immense annex. The result will be to add, altogether, about 200,000 square feet to the space heretofore available for exposition purposes. In other words, the present space is to be nearly quadrupled.

The extension of the floor space in the present building includes a large addition to the portion devoted to machinery requiring power.

A very large number of entries of iron and wood-working machinery have been made, and the display in this respect will equal anything ever seen before on this continent. One room, it is stated, will have twenty-six expensive machines in operation.

The steam supply will be increased from 200-horse power to 600, besides which it is expected that a boiler of 100-horse will be placed in the annex. This will nearly quadruple the present steam capacity. A large new dining-room or restaurant is being added, which will be in charge of a first-class caterer.

The annex will consist of two pavilions extending south and parallel to each other 400 feet, with an open court between them 100 feet wide. The east pavilion will be 90 feet in depth, and the west one 70. Both of these pavilions will be divided into stalls sixteen feet in width, in each of which will be placed a locomotive or a car. The vast central court will be divided by aisles into suitable spaces, which are being allotted to applicants whose exhibits are suited to such location. Many of these exhibitors will erect ornamental booths in which to display their articles. The eastern portion of the court will contain an immense transfer-table, by means of which cars and locomotives can be quickly moved into or out of their respective stalls. There will also be several railway tracks in the court, at least 400 feet in length, in which various devices, such as brakes, couplings, etc., as well as improvements in engines and cars can be tested. In the center of the court a band-stand will be erected, from which music will be furnished afternoons and evenings.

### Railways in West Virginia.

The *Wheeling Register*, in an article on "Railroads in West Virginia," says that the Ohio Central Railroad which has been completed from Point Pleasant to Charleston, will be extended this season at least sixty miles further up the Kanawha, or to its source at the junction of the Gauley and New River. It was at first uncertain up which river the road would go, but it has been definitely determined to go up the New River. The road follows the left bank of the Kanawha to a point above the mouth of the Gauley, whence it will cross by means of an iron bridge, and proceed by way of the New to Hawk's Nest, where it will cross the New and follow its right bank to a point some forty miles above Ainton. This is as far as the road is projected just now, and in all probability it will go no further. Meantime the Richmond and Alleghany Company is at work extending its line toward this State. Williamson's, east of the White Sulphur, has been reached, but as this is 'out of line' with the Ohio Central, a portion of the Williamson route will have to be abandoned and a line further south run in order to join the Ohio Central above Hinton. Thus a continuous line will be established from Richmond to Lake Erie, in north Ohio. The New River Valley is just beginning to develop, and abounds with some of the best coal and ore in the State. The rapidity of development of the Kanawha Valley and the valleys of its influents renders



the early completion of this road very desirable. The approach of roads from the North is also another incentive to execution in the matter. The completion of a road from Pittsburgh to cross West Virginia will throw open a trade whose magnitude cannot now be imagined. As a connection to both the Chesapeake and Ohio and Ohio Central roads, the advantages of such a road are apparent. West Virginia looks to Pittsburgh as the great depot for her coal, coke and ore, and the present anxiety is for a short line through the State to that city.

### The New Steamship Fulda.

THERE arrived at Sandy Hook at a quarter past eight o'clock in the evening of the 24th inst. a splendid new steamship, belonging to the North German Lloyds line, and named the Fulda. She was built on the Clyde, by Elder & Co., who built the Alaska and the Elbe. She is commanded by Captain Christine Leist. This, her initial trip across the Atlantic, was remarkably quick, considering that she had westerly winds all the way. The Fulda's actual time from Southampton was eight days, three hours and fifteen minutes; from Queens-town seven days, eight hours and fifteen minutes, being a difference in her time and the fastest time made by the Alaska of only thirteen hours and fifteen minutes. Her best records were on the 21st, when she made 411 miles, and on the 23d, when she made 401 miles. On the latter date she had a fresh wind, west by north, moderating and changing to northeast, and then came a heavy snowfall. On the 21st she encountered seven icebergs and some ice fields. They were met from 43 deg. 58 min. north latitude and 48 deg. 38 min. west, to 43 deg. 18 min. north longitude and 50 deg. 93 min. west. She had to sail one hour south to get out of the way of the dangerous obstructions.

The dimensions of the Fulda are: Length, 445 feet (about sixty less than the Alaska); beam, 46 feet; depth, 36 feet 6 inches. Horse power, 6,000, with three cylinder engines of five feet stroke. She is all iron and carries four iron masts. The steam pumps and winches for working the cargo are numerous. Among the latest improvements is the electric illumination, two thirty-horse power engines and Siemen's dynamos, one for working and the other in reserve. The lights number 280, and are enclosed in almost every variety of shade, handsomely ornamented.

Her saloon is artistically fitted up in the Renaissance style. This fine apartment is about 50 feet long by 45 feet wide, and has in the center a spacious dome, with panelling richly carved in precious woods and ornamented with oil paintings. The swinging chairs, in blue velvet, are very comfortable. The ceiling is in admirable taste, with gilded, foliated freize, and broken up into panels heavy with the cleverest work of the carver. The lady's saloon, however, on the upper deck is a perfect gem. There are chairs and lounges after the Louis Quinze style; there are panels of finest satin fancifully worked; others filled with oil paintings, while the general woodwork is of polished ebony. The settee coverings are in

maroon and blue velvet with curious patterns. Mirrors are in plenty. The hallway, so to speak, leading to this boudoir is paneled in bird's-eye maple, edged with polished teak. The smoking room, in elegance and comfort, is in keeping with the other parts of the vessel. The second cabin is equally handsome in fine woods and carving, and carpets rich and thick are everywhere.

She has accommodation for 140 first-class passengers, 170 second-class and 1,100 steerage. She brought only 476 passengers. Wiggins' prediction, the captain said, had deterred many from crossing. Her cargo capacity is 3,000 tons.

### Steel Industries of the World.

In an article on the steel industries of the world, contributed to the *Revue Universelle des Mines* by M. Trasenter, the Belgian statistician, we find some interesting facts that have never before jointly appeared in print. Beginning with the raw material, the yield of some of the principal sources of ore supplies in the world has been as follows, in metric tons:

SOURCES OF SUPPLY OF BESSEMER ORES.

	1879.	1880.	1881.
England, hematites.....	2,397,000	3,040,000	3,051,000
Prussia, spathic ores.....	869,000	1,009,000	1,095,000
Syria and Carinthia.....	542,000	.....	509,000
Sweden.....	642,000	770,000	.....
Bilbao, export.....	1,117,000	2,345,000	2,500,000
Algeria, production.....	418,000	614,000	.....
Elba, export.....	282,000	350,000	.....
Lake Superior.....	1,425,000	2,017,000	2,396,000

The exports from Bilbao are known to have been 1,192,000 tons greater in 1882 than in 1881. The Bessemer pig furnaces of England, France, Germany, the United States and Belgium are partly supplied by ores shipped from Spain and from the Mediterranean, as the following table of imports of ores by sea by the various countries, being almost exclusively Bessemer ores, will show. The unit is the metric ton:

IMPORTS BY SEA OF BESSEMER ORES.

	1879.	1880.	1881.	1882.
England.....	1,098,000	2,675,000	2,485,000	3,330,000
France.....	668,000	789,000	815,000	850,000
Germany.....	275,000	400,000	500,000	630,000
United States...	275,000	460,000	750,000	550,000
Belgium.....	45,000	100,000	120,000	170,000
Totals.....	2,360,000	4,422,000	4,690,000	5,530,000

The production of steel ingots in the five principal producing countries in the world was as follows in 1881, the figures given being thousands of metric tons:

PRODUCTION OF STEEL INGOTS.

	Bessemer.	Open-hearth.	Crucible.	Total, 1881.	Total, 1880.	Total, 1879.
Great Britain...	1,465	343	50	1,858	1,414	350
United States...	1,395	133	82	1,610	1,258	64
Germany.....	861	125	38	1,024	762	170
France.....	425	...	8	433	426	80
Belgium.....	141	...	..	141	120	9
Totals.....	...	...	...	5,066	3,980	673

For Austria, Russia and Sweden the figures for 1881 are not yet known, those for 1880 only being given:

	Bessemer.	Open-hearth.	Crucible.	Total, 1880.	Total, 1879.	Total, 1870.
Aus'a-Hungary	101	28	31	160	156	24
Russia.....	300	...	4	304	210	8
Sweden.....	30	8	2	40	28	12
Totals.....	...	...	...	504	394	44

From this the conclusion is drawn that, from a production of about 700,000 tons of steel in

1870, the industry has grown so that it turned out in the whole world about 3,525,000 tons in 1879, 4,500,000 in 1880, and more than 5,500,000 in 1881, and must have considerably exceeded six millions of tons of ingots during 1882. There is more inquiry for steel rails, and prices remain at \$39 to \$40. At these figures importations cannot be made, and the market is not likely to go lower. Eastern mills are said to have contracts which will keep them running for several months. Old rails are quoted at \$23.50 to \$24 for Ts and \$27.50 for double heads. Scrap sells at \$26 to \$28, according to quality.

### A Bicycle Elevated Road.

THE Meigs Elevated Railway bill passed the House of the Massachusetts Legislature last week by a vote of 104 to 74. This is the nearest approach to success that Mr. Meigs has had. He has been indefatigable in his efforts to push his scheme through the Legislature, and once or twice he has seemed to be certain of success in the House when some unexpected opposition has arisen and defeated him. There is small chance, however, that his bill will pass the Senate. The scheme is a peculiar one. Mr. Meigs proposes to build a single-track elevated road, the cars and locomotive straddling the track like a clothes-pirr on a line. The bill as it passed the House authorizes the construction of a road wherever the consent of the town or city can be obtained. The sentiment in Boston is pretty evenly divided on the question, so far as numbers are concerned; but there is a decided opposition to any kind of elevated road in Boston among the real estate owners generally.

### Spring Prices for Coal.

THE Philadelphia and Reading Coal and Iron Company issued on the 20th inst., its new spring circular of prices of coal for shipment. The rates, which went into effect on the 21st, are as follows, free on board at Port Richmond: Hard white ash—Lump and steamboat, \$4.50; broken, egg and chestnut, \$3.75; stove, \$4; pea, \$2.65. Free-burning white ash—Steamboat and broken, \$3.55; egg, \$3.65; stove, \$4; chestnut, \$3.75; pea, \$2.50. North Franklin white ash—Broken, \$3.55; egg, \$3.90; stove, \$4; chestnut, \$3.75; pea, \$2.50. Schuylkill red ash—Egg and chestnut, \$3.75; stove, \$4.20; pea, \$2.50. Shamokin—Egg, \$3.90; stove, \$4.20; chestnut, \$3.85. Lorberry—Egg, \$3.90; stove, \$4.30; chestnut, \$3.85. Lykens Valley (Brookside)—Broken, \$4.35; egg and chestnut, \$4.65; stove, \$4.85. At Elizabethport, N. J.: Hard white ash—Lump and steamboat, \$4.85; broken, egg and chestnut, \$4.10; pea, \$3. Free-burning white ash—Steamboat and broken, \$3.90; egg, \$4; stove, \$4.35; chestnut, \$4.10; pea, \$2.85. North Franklin white ash—Broken, \$3.90; egg, \$4.25; stove, \$4.35; chestnut, \$4.10; pea, \$2.85. Schuylkill red ash—Egg and chestnut, \$4.10; stove, \$4.55; pea, \$2.85. Shamokin—Egg, \$4.25; stove, \$4.55; chestnut, \$4.10. Lorberry—Egg, \$4.25; stove, \$4.65; chestnut, \$4.20. Lykens Valley (Brookside)—Broken, \$4.70; egg and chestnut, \$5; stove, \$5.25. This shows a decline of from

15 to 60 cents per ton. The greatest decline is in egg, stove and chestnut sizes and the smallest in lump, steamboat and pea coals.

### Refrigerator Cars.

In January last, says the New Orleans *Times-Democrat*, we published a lengthy interview with David M. Higgs, president and general manager of the Texas Continental Transportation Company, which was recently organized to operate the refrigerator car business over the Huntington-Pierce system of roads. On the 16th inst. a reporter met Mr. Higgs and accompanied him and Wm. Fagan to the freight depot of the Jackson Railroad, where he was shown the cars of the company.

The Texas Continental Transportation Company is a fast, perishable-freight line to operate over the Southern Pacific, Galveston, Harrisburg and San Antonio Railway system. New Orleans to San Francisco; Chesapeake and Ohio; Chesapeake, Ohio and Southwestern; Cincinnati, Indianapolis, St. Louis and Chicago; Ohio and Mississippi and Kentucky Central railways and connections forming a complete system—North, South, East and West. Mr. Higgs, who has a practical knowledge of freight cars, having worked in them as a boy and for many years afterward, invented the refrigerator cars used on this line and had them patented in 1881. He was general manager of these cars on the Gould fast freight line, but resigned to accept his present position.

The car is solidly constructed of the best woods. It is thirty-four feet long and nine feet wide. Between the framework of the floor, ceiling and sides are placed material which acts as a non-conductor of heat or frost. At each end of the car are compartments or tanks for the ice of novel device, with a capacity of four tons. Any hot air is drawn up over these compartments. The cold air descends and deposits the moisture on what is called the galvanized umbrella. Beneath the ice tanks are small troughs to let the drippings of the ice run out. Racks are arranged on top to hang the meat on.

The car is perfectly air-tight, the only openings being the doors on each side. When they are closed it is hermetically sealed. The temperature of the car is so perfected as to prevent freezing in winter, and it is heat-proof in summer, thus preventing any difference being made in the change of climate. A piece of sack that had been soaked in water three or four hours before was found to be nearly dried, while the water that had fallen on the floor was almost dried up. A match could be ignited within an inch of the iron work in the car, demonstrating the complete absence of any dampness.

Mr. Higgs stated that the American Company transported in one year \$3,000,000 worth of property, paying the railroad \$500,000 freight, and they never lost a dollar. Mr. Higgs' company gives a guarantee bill of lading on the freight they take in these cars. These cars have been running here since January, carrying all classes of perishable property. In May it will begin carrying dressed beef.

The Texas Continental Transportation Company now has cars out and in operation, besides 100 contracted for to be delivered by June 1, when another 100 will be built at once. It is calculated that the company will build between now and January 1, 1884, 300 cars, and as many thereafter as the business requires. A large business is expected to be done from Newport News to the west in the fruit and vegetable line. This product comes in a little later than New Orleans and Texas product and will be a new departure for the Virginia growers; their markets heretofore being New York, Boston, Philadelphia and Baltimore. But the Texas Continental line will open up with their cars over the Chesapeake and Ohio Railroads new markets in the Northwest. Cars are now being built at Terre Haute for this particular branch of the business, being made high and roomy so as to hold large carloads of bulky property. The company will have agents to promote this business, and find markets for this class of products in the Northern States and cities, and will always see that shippers' interest are looked after and their property delivered in good condition.

### The Work Accomplished by the Okeechobee Drainage Company.

JAMES M. KREAMER, Chief Engineer and Superintendent of the Atlantic and Gulf Coast Canal and Okeechobee Land Company, has issued a statement of the results thus far attained by that company in its efforts to reclaim 11,000,000 acres of low lands in the Florida Everglades. The drainage problem means simply the relieving of the land from surface water immediately after the rainy season. This, it has been demonstrated, can be done by the construction of canals and the opening of old river beds. The work already performed has resulted in the reclamation of 380,000 acres of land, for which the State has donated 190,000 acres in return, in compliance with the terms of the company's contract with the State.

A drainage canal, six feet deep and forty feet wide, is being constructed from Lake Tohopekaliga to Lake Cypress, a distance of  $3\frac{1}{4}$  miles. Work was begun at this point in July, 1882. Since then Tohopekaliga, which has an area of about twenty-four square miles, has been lowered thirty inches. A canal  $3\frac{1}{2}$  miles in length has been cut below Kissimmee in order to draw off the waters of Lakes Isabel, Alligator and East Tohopekaliga, that are clustered together in that vicinity. There is now being cut a canal from Lake Flirt, on the Upper Caloosahatchie River, to Lake Okeechobee, a distance of eleven miles, which is designed to be six feet deep and twenty-five feet wide. Operations have been conducted without intermission during the year. The character of the work necessitates the daily exposure of the force to the weather, notwithstanding which the men have retained their health.

It is proposed, by other canals from Lake Okeechobee to the south and east, to lower the water surface of Okeechobee eight feet below its present level. This once accomplished the bordering lands of the lake and streams tributary will be improved, and upwards of 1,000,000

of the richest acres will thus be rendered susceptible of successful cultivation.

### Elevated Railways in Germany.

THE Berlin City Elevated Railroad, crossing the city from east to west, which was first opened about a year ago, carried 6,173,700 city passengers in the first eight full months after it was opened, March to October, inclusive. It forms the city entrance for several railroads east and west of the city, and in connection with them in six months ending with October it carried 307,670 suburban and 126,870 other passengers. The total number of passengers carried in the six months was 5,000,340, or an average of 833,390 per month—about equal to ten days' travel on the Third Avenue or Sixth Avenue elevated roads in New York. The largest traffic was in May—1,045,520 passengers. In the budget of the State Railroad Administration the earnings of the road for the first year were estimated at \$825,000; the prospect now is that they will not exceed \$560,000. The rates on this road vary with the distance and the class of cars, and the average receipt per passenger has varied curiously from month to month.

### Dining Cars for the Canada Southern Railway.

Two handsome dining cars for the Canada Southern division of the Michigan Central Railroad are reported to have arrived in Canada from the shops at Wilmington, Del., where they were built. They are wider and longer than the ordinary coach and ride much easier. The exterior is painted light yellow, and upon the upper edge are the words, "Michigan—C. S. Div. Central," in metal letters. The panel in the center of the cars bears their respective names, "Detroit" and "St. Thomas." The trucks are supplied with 42-inch hollow wheels, having steel tires. The interior is finished in light woods and decorated in a manner that gives the car an elegant, cosy and attractive appearance. The entrances and plate-glass windows are hung with rich curtains, and the panel between each window is filled with a fine plate-glass mirror. The roof is ornamented with sketches inclosed in simulated frames, of fowl and fruits. The tables, ten in number, are so constructed that they can be removed when not in use. The seats are similar to those of a sleeping coach in style, and are upholstered in leather. The kitchen and serving room are located at one end of the car, and supplied with refrigerators and all necessary utensils. At night the cars will be lighted from half a dozen brass chandeliers, having each two lamps. Supplied will be carried in lockers underneath the car, and the heating apparatus is of the Baker patent. The cars will probably go into service about the first of April. They have been turned over to Master Mechanic Robert Potts, of the Canada Southern, and are stored at East Buffalo, together with ten new coaches for the division, which were delivered at the same time.



### Prosperity of the Ocean Steamship Trade.

THE London *Examiner* says that the past year has been one of unusual prosperity for the steamers plying between England and America, and asserts that such vessels as the *Alaska*, *Servia*, *Gallia*, etc., earn each voyage from £18,000 to £20,000, one-half of which is profit. To this fleet is to be added during summer another vessel, the *Oregon*, which is intended to excel in speed the fastest steamer afloat. As described by the *Examiner* she will not be much larger than the *Alaska*, but her engines are to indicate no less than 13,000 horse-power. She will have but one screw, about twenty-four feet in diameter, with a pitch of nearly forty. Steam will be supplied by twelve boilers, each with six furnaces. The *Oregon* will burn about twenty pounds of coal per square foot of grate per hour, her consumption in twenty-four hours will not be much under 300 tons; and, allowing that each ton of coal evaporates nine tons of water, it follows that no less than 2,700 tons of steam will pass through her engines every twenty-four hours.

A tank 100 feet square, to hold 2,700 tons of water, must be nearly 10 feet deep to prevent the water from running over the edge. If the tank were 50 feet square, the water would stand 38 feet 10 inches deep in it. If the water were supplied to a town, allowing 4 cubic feet or 25 gallons per head per day, it would suffice for a population of 24,000 souls. The total weight of water evaporated on the run across the Atlantic will not be far short of three times that of the whole ship's cargo, engines and all. Assuming that she makes 20 knots an hour, omitting fractions, 2,023 feet per minute, the thrust of her screw—that is to say, the force pushing her ahead through the water—will amount to over 94 tons, or about as much as 20 of the most powerful locomotive engines in England would exert if all were pulling at her together.

### Central Asian Railway.

A CORRESPONDENT of the London *Times*, writing from St. Petersburg under date of February 20, says:

"A certain M. Alexandroff has just ventilated a fresh project in the *Novoe Vremya* for constructing another new railway in Central Asia through a tract of country hitherto considered almost impassable. This new line is to be a great commercial success. After referring to the difficulties and expensiveness of the present commercial route, the author asks whether it is not possible in the first place to make use of the natural means of communication between European Russia and Central Asia—that is, the Volga, the Caspian and the Amu Darya. Both the rivers are easily navigable for steamers as well as barges, to say nothing of the sea. The Kyzil Arvat Railway, though made for purely military purposes, has been considered as useful also for extending Russian commerce to Persia, Khiva and Bokhara. It may be thus used as far as concerns the other country, but it is scarcely applicable for communication with Khiva and Bokhara. Besides the road from the Khivan

oasis to Kyzil Arvat, there is another route that might be used for constructing a commercial highway, and that is from the delta of the Amu Darya through the low hills of the Ust Urt to the northern part of the Caspian. The construction of such a railway, states M. Alexandroff, would offer no great technical difficulties, and would be in all only about 340 miles long. It would unite the basin of the Amu Darya with the great commercial highways of European Russia."

### Annual Production of Lead.

It is estimated that the annual production of lead in the United States is 124,000 tons of 2,240 pounds, of which Missouri and Kansas produce 28,000 tons. The increase of production for the past few years has been at the rate of 15,000 to 20,000 tons per annum, which has been successfully met by increased consumption. Last year the eleven desilverizing works in the West turned out 100,000 tons of lead of 2,240 pounds, and \$20,000,000 worth of gold and silver, making their output of base and precious metals aggregate something like \$30,000,000. This year the western mines promise to largely increase their output, and particularly is this true of the mines of Utah, Colorado, Nevada, Montana, New Mexico and Idaho. Concerning the future of lead the *Iron Age*, from which the above was obtained, says: "Left to itself lead may sink to a lower level than it did in 1882, and this may stimulate consumption to a greater extent than is generally supposed. The sooner it reaches that level, whatever it may be, the better, and the steadier the prices remain afterward the better it will undoubtedly be for the consumer."

### Reserved Seats.

THE custom of reserving seats in railroad cars is not unusual, yet some people seem to have a doubt of its propriety. A few days ago this doubt was actively expressed upon a road passing through one of the suburbs of Boston, the method of expression being perhaps somewhat peculiar. A passenger who had filled an empty seat with parcels and papers with the evident intention of signifying its reservation was surprised by the removal of the packages by another passenger. "This seat is saved," was the polite objection. "I'll take it," was the rather abrupt rejoinder. "But I'm expecting a friend." "Your friend can take another seat." "If my friend comes I shall request you to remove your seat." "If your friend comes I shall keep this seat. I don't approve of saving seats for a short distance." And possession proved to be "nine points of the law," but there wasn't any friendship lost between those two passengers.

### Immense Estates in Mexico.

MUCH has been said and written of the great extent and large possibilities of Mexican haciendas. But probably few people in the United States even yet realize the extent of some of these tracts of land, where a million or a million and a half of acres often constitute a sin-

gle estate in the hands of one owner. There are many such estates in Mexico large enough to hide away many a European principality, large enough to awaken the envy of many a land proprietor in the Pacific coast States of the Union. These are to be found in many of the Central and Northern States of Mexico. The famous Salado ranch, for example, contains over 600 square miles of land. It lies partly in the States of Nuevo Leon, Coahuila, Zacatecas, and San Luis Potosi, on the highway to Mexico, and on the line of the new railroads. It occupies the central table-lands of Mexico at an average elevation of 4,000 feet. Chains of mountains traverse the estate, rich in mineral wealth. The boundaries of the estate extend more than 100 miles from north to south, and flourishing farms and large mining towns are met at frequent intervals.

### Sixty Miles an Hour.

THAT a high rate of speed can be obtained by the use of the independent cut-off valve on engines was explained in a lecture delivered in Philadelphia on the 21st inst. by Prof. W. Barnett La Van. He compared the stationary engine of the past with the locomotive engine of to-day. The speed of the engine, he maintained, could be increased to between seventy and eighty miles an hour without any special change in the present construction of locomotives, and that a uniform speed of sixty miles an hour can be accomplished with the same engine now in use with the addition of an independent cut-off valve.

In the old days, when the stage-coach was used as a means of travel, the loss of life among people who traveled was one in 5,000, while at the present time it is only one in 5,000,000.

### Weekly News Items.

JOHN E. WOOTTEN, general manager of the Philadelphia and Reading Railroad, claims that by the use of a process of which he is the inventor upon the locomotive engines of the company for the burning of "waste coal" an annual saving of over half a million of dollars can be effected. For years this process has been in use throughout the anthracite region, and where formerly the choicest coal would have been taken to burn under the boiler, it is now the common and will soon become the universal practice to save all the marketable coal for shipment, and to consume about the collieries only the fine refuse which would otherwise be thrown upon the "culm bank" or dirt heap, and wherever stationary boilers are employed "pea coal and dust" are coming into general use. The saving in the case of stationary boilers by the adoption of Mr. Wootten's plan is probably greater even than with locomotives.

THE shops of the Indianapolis and St. Louis Railroad at Mattoon, Ill., have recently turned out a handsome passenger train and a new engine. The latter will be known as No. 106, and is the largest passenger engine on the road. This engine was built to haul heavy express trains, weighs forty tons without a tender, has a

seventeen and one-half by forty cylinder; driving wheels, five feet and eight inches; straight smoke-stack, extension-boiler, air-brakes, and is a model engine in every respect. The passenger cars are Nos. 202 and 204, and have been rebuilt. They are painted Tuscan red, and lettered with gold leaf "Indianapolis and St. Louis." The words "Bee Line" also appear on them.

A TRAIN of parlor cars, built expressly for the Bound Brook route, has just been turned out of the shops at Reading, Penn. Each cost \$10,000 in round figures. They are divided into several apartments, and the finest plush has been used in upholstering, all of which has been done in a skillful manner by the upholsterers in the employ of the company. Each car is supplied with smoking and wash-rooms fitted up with an eye single to convenience and comfort. Solid silver receptacles adorn the car on each side, and the heating facilities are of the best.

E. N. SMALLEY, in the *February Century*, said that the consumption of beer in the camps of the railroad builders is enormous. At Bismark he saw an entire freight train of thirty cars laden with bottled beer from a Chicago brewery, bound for the town nearest the end of the track. The chief engineer of the construction force said that an average of one bottle for every tie laid was consumed, and that the tie and the beer cost the same—fifty cents. Thus the workmen pay as much for their drink as the company for one of the important elements of railway construction.

THE Pittsburg, Cincinnati and St. Louis Railway Company is having built as an experiment sixty box cars, thirty-six feet in length, which will have a carrying capacity of 50,000 pounds. Master car-builders have worked steadily up from the old limit of 20,000 pounds in freight cars to 25,000, 30,000 and even 40,000, but the increase to 50,000 pounds is certainly a bold one. Practically, however, there is no limit to the possible capacity of cars, provided enough wood and iron are used and the track and structures will sustain them.

THE Cincinnati, New Orleans and Texas Pacific Railway Company, lessees of the Cincinnati Southern Railway, have made arrangements whereby their trains, both freight and passenger, will run to Louisville over the Lebanon branch of the Louisville and Nashville road. This gives the Cincinnati Southern control of the shortest route from Louisville to Chattanooga and all points south and southeast, and makes it the only competition against the Louisville and Nashville systems. The company will open offices in Louisville.

An official circular of the Treasury Department at Washington announces the suspension of the privilege of exchanging three-and-a-half per cent bonds for threes during the month of April, as the transfer books will be closed during that month for the preparation of checks for May interest. Bonds will be received and filed during April, however, for subsequent

exchange, and interest on the three-and-a-halves so filed will be paid up to May 1st, and on the threes issued therefor from and after that date.

THE Chesapeake and Ohio Railway, with its connections, has arranged a fast schedule via the Baltimore and Potomac Railroad and the Richmond, Fredericksburg and Potomac Railroad and its Peninsula Division, to Old Point, placing passengers within a short distance of the Hygeia Hotel. Passengers by this route go direct to Old Point from Richmond, touching, among other points of interest, at Alexandria, Fredericksburg, Fort Lee, the Chickahominy, Williamsburg, Newport News and Hampton.

THE new passenger elevator at the Broad street station of the Pennsylvania Railroad at Philadelphia has been tested in order to prove the efficiency of the patent safety air cushion. The cab was hoisted to a height of eighty feet, and the cushion having been adjusted, the rope was cut, allowing the cab to fall the full length of the shaft. The nails in the floor of the elevator were forced up by the shock, but the cab sustained no other damage. The floor will be replaced by a heavier one.

THE Pennsylvania Railroad Company has issued a circular publishing the provisions of the act of incorporation that no transfer of stock within sixty days of election shall entitle the holder to vote; that no male stockholder living within ten miles of the place of election shall vote by proxy; that no person shall represent more than three absent holders by proxy, and that proxies must be legally executed within three months of the election.

THE officers of the Minneapolis and St. Louis, the Burlington, Cedar Rapids and Northern, the Chicago, Burlington and Quincy, and the St. Louis, Keokuk and Northwestern Railroads have decided to re-establish the fast passenger line between St. Louis, Minneapolis and Lake Minnetonka and St. Paul, to be called the St. Louis, Minneapolis and St. Paul Short Line. It was formerly known as the Iowa route. This arrangement goes into effect on April 1.

A NEW horse-shoe has been devised which might be profitably employed on the tramways whose cars are propelled by horse-traction, which class of roads are by far the most numerous. The shoe is composed of three thicknesses of cowhide compressed into a steel mold and subjected to a chemical preparation. It is said to last longer than the common shoe, weighs only one-fourth as much, requires no corks, and is very elastic.

THE old locomotive "Rocket," built by George Stephenson, the first engine ever run on a railroad, will be exhibited at the National Exhibition of Railway Appliances, which will open at Chicago on the 24th of May. It is now in the South Kensington (London) Museum. Another old engine from England will be exhibited, also from Nova Scotia, and one of the first engines used on the Baltimore and Ohio Railroad.

## CORRESPONDENCE

[COMMUNICATIONS are solicited for this department on all subjects pertaining to Railroads, Steam Navigation, Machinery, Manufactures, etc. No attention will be paid to communications unless the name and address of the writer is furnished us, though if desired, they will be withheld from publication. We assume no responsibility for statements made by correspondents, and we do not necessarily endorse ideas advanced by them. Under these conditions we think it of value to our readers to devote a liberal space to the free discussion by others—whose opinions may be at variance with our own—of subjects pertinent to this department of the AMERICAN RAILROAD JOURNAL.]

### OUR CANADIAN LETTER.

[From our Special Correspondent.]

#### RAILROAD AND OTHER NOTES.

The Great Western "Air Line" is to be balasted from Glencove to Fort Erie, and generally put in first class order to accommodate the great increase in traffic consequent on the opening of the Sarnia cut off. In future all the Buffalo freight will go by the "Air Line."

John Porteous, General Freight Agent of the Grand Trunk Railway, General Superintendent Canada Southern and representatives of the Atchison, Topeka and Santa Fe, New York Central, and Chicago and Rock Island Railways held a meeting with reference to freight business in Toronto on Thursday last.

Work on the Murray Bay Canal is progressing and when spring opens an additional force will be put on.

A Kingston gentleman interested in the Kingston and Pembroke Railway says that there are no indications of the sale of the road. The railway, as now managed, pays better dividends to the shareholders than it would if any other company owned it. The road will continue to act in concert with both the Grand Trunk Railway and Canadian Pacific so long as it is advantageous to do so. This gentleman considered the sale of the road a thing not likely to occur for some time.

The traffic return of the Toronto, Grey and Bruce Railway for the week ending March 17, 1883, was \$6,298.

The traffic of the Midland Railway of Canada for week ending March 17, 1883: Passengers and mails, \$4,312.81; freight, \$8,324.05; total, \$12,636.86, as compared with \$16,305.27 for the corresponding week of 1882, being a decrease of \$3,668.42; and the aggregate traffic to date is \$152,393.50, being an increase of \$1,049.69 over 1882.

It is said that Mr. W. P. Taylor of the Canada Southern has accepted the general superintendency of the New York, West Shore and Buffalo Railway and will enter upon his duties May 1st next.

The Pontiac and Pacific Railway having negotiated the sale of one and a half million of six per cent bonds in England, are paying their outstanding bills to contractors and others.

The following special cable was received by the Toronto *Globe* March 21: The Grand Trunk report of the working of the combined lines from August 12 to December 31 was issued to-day. The gross receipts as compared with the corresponding period in the previous year show an



increase of fourteen per cent. The working expenses have decreased six per cent. The directors propose on an early date to invite subscriptions for £750,000 perpetual four per cent debenture stock for the redemption of the pre-preference securities now maturing, and to provide for other capital requirements. The president will submit at a meeting the views of the Board respecting the consolidation of debentures and other stocks of the company, and the separation of contingent from the more immediate rights of the share capital.

The Montreal and Sorel Railway have authorized an issue of \$2,000,000 at six per cent.

WINNIPEG, March 25.—A deputation of citizens of Brandon waited on General Manager VanHorne, Canadian Pacific Railway, yesterday, relative to construction of the Souris branch of that road. He said the company had already entered into contract to build seven hundred miles of the main line to the Rockies this year, with the Selkirk and Emerson branches. The Souris branch would be, however, constructed at the earliest possible day, in fact surveys would be made this season and the line located.

Mr. Langdon, of the firm of Langdon & Sheppard, Canadian Pacific Railway contractors, says that the railway would be completed to Calgary by the 15th of August, and that it was likely that the Rockies would be reached before winter set in.

A fat stock fair will be held in Toronto on December 13th, 14th and 15th, \$14,000 in prizes will be given.

Mr. W. Whyte, late of the Grand Trunk, assumes the place of Mr. Jame Ross as superintendent of the Credit Valley. The appointment is conceded by all to be the best that could be made, such is Mr. Whyte's popularity.

Five postal cars, American style, are to be placed on the Grand Trunk between Montreal and Toronto.

The Montreal City Gas Company have reduced the price of gas to \$1.70 per thousand a reduction of 20 cents.

#### MARITIME PROVINCE NOTES.

There have been heavy freshets in Nova Scotia and New Brunswick—and mills, bridges, etc., washed away causing much damage, the waters are receding slowly, and it will be some weeks before the damages done is repaired.

The Star Manufactory of Halifax has declared a dividend of 6 per cent.

The Oxford Gold Mining Company of Chezetcook, Halifax Co., N. S., has declared a dividend of 5 per cent on the capital stock. Their total bullion productions since January 1st, 1883, has been \$7,365.

Work has not been resumed at the Lingan Mines as the men still fear ill treatment from the union men. If there are any further serious troubles amongst the striking coal miners at Lingan, Imperial troops will be sent from Halifax to suppress them.

Mr. William Brymner, principal of the Ottawa Art School, has prepared a cast of the Tadousac Fish Hatchery on the Saugenay river, showing in a beautiful manner the buildings, dams, lake and part of river. The cast was shipped on Saturday to England.

Some ten car loads of cases of mounted fish were shipped to Halifax on Thursday last by

the Marine and Fisheries Department.

Over 600 tons of freight comprising specimens of Canadian fish products, animals, etc., will be shipped during the first week in April to England via the government steamer Newfield to be exhibited at the London International Fisheries Exhibition.

Some years owing to lack of snow the supply of lumber is short. This year owing to the great quantity of snow, and the consequent increase, the cost of lumbering, it is claimed that the supply will be short, or at all events not exceed that of last year. Opinions differ as to the price of lumber this year, some contending that it will cost more than last year, while others say that though the cost of production may be increased as compared with last season, it does not follow that the prices will be increased or even sustained as the demand will regulate that.

"W."

OTTAWA, March 28, 1883.

#### English and American Railway Travel Contrasted.

EDITOR AMERICAN RAILROAD JOURNAL:

SIR:—Referring to an article headed as above in your issue of 17th inst., perhaps it will not be uninteresting to some of your readers to have an Englishman's views on this subject, as there are always two sides to a question. Undoubtedly there is a great difference in the two systems of railroading; each has been brought about by the wants of the people, and are best suited to their respective countries. To introduce the whole of the American system of travel into England would in many respects be found unsuited to the ways and habits of the people, quite as much so as to introduce the English system in America. When we take into consideration the above, I cannot see how the railways on their own merits will bear comparison.

With your permission I would like to correct a few of your remarks as to the English system. One reason, no doubt, why the "Pullman" cars in England are not more generally patronized, is because only first-class ticket-holders (for an obvious reason) are allowed to do so; and they form a small proportion of the traveling public.

The second and third-class carriages (especially on the through routes) of late years have been so much improved that to take a first-class ticket, even by many who can well afford to do so, is considered an unnecessary expense, except when privacy is desired. I must here contradict your remark that the second and third-class carriages are on a par with the American emigrant car. The second-class are always, and the third-class more often than not, well cushioned, fitted with hat-racks, etc., which is more than can be said of the American emigrant cars, as far as my knowledge of railway equipment (after nearly ten years' residence on this side of the Atlantic) goes.

You make a strong point of the "Pullman" cars but say nothing respecting the English "saloon" carriages which are handsomely and conveniently fitted up.

As regards the relative fares charged, the first-class fare there, on the average, is a cent, or a trifle more per mile than the first-class fare

here; the second about the same, and the third a cent less. I am speaking of single fares—return tickets are issued at much lower rates.

Your remarks as to the duties of the "guards" also needs a little correction. The guards (except in rare cases), have nothing whatever to do with tickets, seeing that one guard is often the only employé on a train (besides the men on the engine), his duties include those of conductor (with the exception of looking after the tickets), baggageman, expressman, and brakeman; he has quite enough to do without collecting tickets, that duty being performed at junctions and terminal stations by men appointed for that purpose; at wayside stations it is generally done by a platform porter.

I consider the "tedious and wholly unnecessary delay" in collecting tickets, that you speak of, is more than made up by the short stoppages at stations *en route*, and the higher average speed of trains; moreover, tickets are collected from the through express trains at the last station where the train is booked to call, and done during the time the luggage (baggage), express parcels, etc., are being loaded up, very little, if any, unnecessary delay therefore occurs.

As to not being able to get water, I don't think as a general thing that is a matter of much moment in England, far less water is drank there than here, the difference in climate is probably the reason.

And now as to the checking of baggage. I will just give you my experience when traveling a few years since from Glasgow to London, my baggage was checked, and a check with a corresponding number was given to me, which I had to produce at St. Pancras station before I could regain my baggage. The only difference between it and the American system being the substitution of paper for brass checks. Even without the check system, there is no more necessity to look after luggage *en route* there than here, providing the passenger sees it properly labeled before starting. No doubt luggage sometimes goes wrong when changing at junctions, through mistakes of the guards or porters; such mistakes also occur here, for which there is less excuse, as baggage men's duties are more restricted to that one thing, than a guard's.

I fail to agree with you that the American system will be adopted in a few years on the English roads, for more than one reason. Seclusion from strangers is a characteristic of the English when traveling, and until they change in that respect, I do not think the American cars will meet with much favor there.

As to murders and robberies, considering the vast numbers that travel in England, I do not think such cases are so numerous as to cause much alarm. The American railway system is not free from such cases by any means, only it is usually done here in the old-fashioned stage coach way, i. e. by a gang of men stopping the train (sometimes wrecking it), and going through it in a wholesale manner.

Before concluding, I will say a few words as to the disadvantages of the American car. In the first place, the amount of dead weight hauled per passenger is far too heavy, and in the next place the number of doors to each car are too limited for quick despatch of trains;

this would be especially felt on the metropolitan lines, where the trains are numerous, and have to be got over the roads as quickly as possible.

As to speed, punctuality, and number of trains (three very important matters to business men), I think the English railways have the advantage. Yours, etc.,

"R."

TORONTO, March 26, 1883.

### Smoking.

MR. EDITOR:—I saw by your JOURNAL of the 17th March, an article in relation to laborers being taken up by trains on the roads, and their smoking in the smoking cars. Here are men complaining of others indulging in the same nasty habit as themselves, only the tobacco does not suit their refined tastes, and yet these same gentlemen will force the abominable stench down the throats and up the noses of those who never use the weed, and to whom it is not only disagreeable but absolutely sickening, and if it is even intimated to them that such is the case, they will be highly offended, and tell you if you do not like it, go some where else. Take the Central Railroad of New Jersey waiting room. Between the entrance, from the street, and the sitting room, the atmosphere is abominable, and men puff their smoke into ladies' and gentlemen's faces in perfect clouds while waiting for the gate to the boat to be opened. Also in the mornings, men entering, many will go through the train with their segars and pipes lighted, fumigating the whole train, and as it is coming warm weather the smoking car must have the rear door open, and unless the next car has the door shut the whole train is fumigated. Smokers must have their rights, but what rights have non-smokers, ladies or gentlemen, in cars or waiting room.

A COMMUTER.

**NEW YORK CENTRAL AND HUDSON RIVER RAILROAD.**—Commencing November 6, 1882, through trains will leave Grand Central Depot:

8 a. m., Western and Northern Express to Rochester and Montreal with drawing-room cars; also to Saratoga.

8:40 a. m., Special Express for Chicago, daily, stopping only at Albany, Syracuse, Rochester, Buffalo, Erie, Cleveland and Toledo.

10:30 a. m. Chicago Express, drawing-room cars to Canandaigua, Rochester and Buffalo.

11 a. m., to Albany and Troy, with connection to Utica, Saratoga, Glens Falls, Lake George and Rutland.

3:30 p. m., Albany and Troy special, Saturdays only.

4 p. m., Accommodation to Albany and Troy.

6 p. m., St. Louis Express, with sleeping cars for St. Louis; running through every day in the week, also Niagara Falls, Buffalo, Toledo and Detroit.

6:30 p. m., Express daily except Sunday, with sleeping cars to Syracuse and to Auburn Road, also to Saratoga and Montreal.

9 p. m., Pacific Express, daily, with sleeping-cars for Rochester, Buffalo, Cleveland, Toledo, Detroit, Chicago and Lowville.

11 p. m., Night Express, with sleeping-cars to Albany and Troy. Connects with morning trains for the West and North.

Tickets on sale at No. 5 Bowling Green, 252 and 413 Broadway, and at Westcott's Express Offices, 3 Park Place and 785 and 942 Broadway, New York, and 333 Washington street, Brooklyn.

O. B. MEEKER,  
Gen. Passenger Agent.

J. M. TOUCKY, Gen. Sup't.

## NEW YORK AND NEW ENGLAND RAILROAD.

### Resumption of the Favorite Transfer Steamer Maryland Route.

THROUGH PULLMAN CARS FOR

PHILADELPHIA, BALTIMORE AND WASHINGTON,

WITHOUT CHANGE: connecting with through trains to Florida and all points South and West. Train leaves Boston at 6:30 P. M. daily.

Leave Boston for Grand Central Depot, New York, at 9 A. M.; returning, leave New York at 11 A. M. and 11:34 P. M., week days. Pullman Palace Cars run through.

### THE NORWICH LINE

—BETWEEN—

### BOSTON AND NEW YORK.

Steamboat train leaves Boston 6:30 P. M. arrives at New London at 10:00 P. M., connecting with the new steamer City of Worcester, Monday, Wednesday and Fridays, and City of New York, Tuesday, Thursday and Saturdays. Returning, steamer leaves Pier 40, North River, New York, at 4:30 P. M., connecting at New London with train leaving at 4:05 A. M., arriving in Boston at 7:55 A. M. Good night's rest on the boat.

### Ask for Tickets via N. Y. & N. E. R. R.

Office 322 Washington st., Depot foot Summer st., Boston.

S. M. FELTON, Jr.,

Gen'l Manager.

A. C. KENDALL,

Gen'l Pass. Agent.

## STRIKING HEAD LINES.

Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

Its **EIGHT** Trunk Lines traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

Located directly on its lines are the cities of **CHICAGO, Milwaukee, La Crosse, Winona, St. Paul, Minneapolis, Madison, Prairie du Chien, Mason City, Sioux City, Yankton, Albert Lea, Aberdeen, Dubuque, Rock Island, Cedar Rapids, and Council Bluffs**, as well as innumerable other principal business centers and favorite resorts; and passengers going West, North, South or East are able to use the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY** to the best advantage.

Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

S. S. MERRILL,  
General Manager.

J. T. CLARK,  
General Sup't.

A. V. H. CARPENTER,  
Gen. Pass. and Tick. Agt.

GEO. H. HEAFFORD,  
Ass't Gen. Pass. Agt.

## HOUSATONIC RAILROAD.

### THE ONLY LINE RUNNING THROUGH CARS

Between New York, Great Barrington, Stockbridge, Lenox, and Pittsfield—the far-famed resorts of the

### Berkshire Hills

of Western Massachusetts—the "Switzerland of America."

Two through trains daily between New York City and all points on the Housatonic Railroad, from the Grand Central Depot via the New York, New Haven, and Hartford Railroad at 10:00 A. M. and 3:39 P. M.

Descriptive Guide-Book sent free by mail upon application to the General Ticket Agent.

H. D. AVERILL, Gen'l Ticket Agent.

W. H. YEOMANS, Superintendent.

General Offices Bridgeport, Ct. Dec. 27, 1882.

## "Progressive and Reliable."

"Under its present management,

### THE ERIE RAILWAY

is become the most progressive and reliable Trunk Line in America."—*Cleveland Leader.*

### THE ERIE

is the **SAFE and COMFORTABLE** Line between the East and West. Its equipment is unsurpassed—Pullman Coaches, Westinghouse Air-Brake, Miller Safety Platform, Cars Lighted by Gas, Steel Rails, Double Track.

The scenery along the line includes such great Works of Nature as Niagara Falls, Watkin's Glen, Portage Falls and Gorge, the Great Lakes and the Lakes of Central and Western New York, making it truly the "LANDSCAPE ROUTE OF AMERICA."

E. S. BOWEN, Gen. Supt., N. Y. JNO. N. ABBOTT, Gen'l Pass'r. Agt., N. Y.



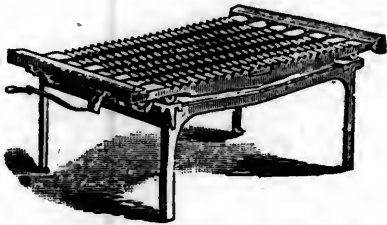
## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	246,062	2,800,679
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,990	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,658	1,872,370	2,091,411	2,159,382	1,800,346	2,088,519	2,185,303	2,507,857	2,297,071	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,549	2,242,000	1,968,000	25,713,150
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	198,681	222,762	221,559	199,443	214,352	238,236	250,110	247,303	211,820	240,795	218,000	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,006	262,858	247,144	236,306	230,022	203,562	2,702,762
1882.....	210,450	209,708	208,981	267,454	255,939	260,755	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,196
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882.....	570,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	699,323	8,211,988
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,670	1,591,052	1,560,597	1,854,269	17,025,456
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,999
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,567	383,202	385,586	373,370	370,099	392,921	432,615	3,981,266
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	375,790	4,973,052
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,697	172,541	182,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,006	192,299	177,167	229,858	228,653	221,320	211,014	195,809	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	189,956	2,645,530
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	624,728	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	626,728	6,349,057
<b>HANDBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,840	215,103	231,913	195,607	180,376	2,230,961
1882.....	125,601	152,691	162,475	150,481	151,999	147,526	184,609	254,569	239,732	238,563	249,252	239,891	2,303,388
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673,182	8,304,812
1881.....	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737,218	703,475	8,586,397
1882.....	746,744	697,274	686,228	640,014	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	90,283	192,085	203,677	200,064	199,840	190,125	272,114	247,322	225,678	200,450	192,622	2,487,569
1882.....	195,824	175,755	206,235	205,934	182,554	186,113	206,072	278,814	273,100	269,646	256,998	205,212	2,641,675
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,215	12,981,140
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,268	287,372	2,273,622
1881.....	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,886	258,812	2,083,224
1882.....	159,676	158,590	148,166	141,937	134,378	135,184	135,174	137,475	157,874	267,433	295,110	307,643	2,179,666
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,952
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	261,082	2,448,169
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	240,063	2,809,255
1882.....	213,840	217,261	265,222	261,044	289,722	295,392	289,441	346,490	338,347	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,228	16,509,127
1880.....	1,296,381	1,296,381	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	380,157	382,657	454,906	487,273	465,588	487,287	440,811	498,008	429,505	449,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	482,607	482,526	509,083	667,488	592,435	550,225	526,685	490,003	5,800,176
<b>NORTHERN PACIFIC:</b>													
1880.....	81,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	3,629,710
1881.....	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	439,724	4,044,576
1882.....	245,369	268,935	373,141	451,023	616,23								

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By this means we get the largest percentage of circulation of air, which keeps the bars cool and prevents them from burning or warping. There is also fully ten per cent of fuel saved, as it does away with the necessity of opening the furnace door and shaking the fire, and thus preventing large volumes of cold air rushing in and producing sudden expansions and contractions, frequently blistering the bottom of the boiler.

This bar has two very superior qualities which no shaking grate ever possessed. The first is a large friction roller at each end of the bar, thus enabling it to be moved back and forth with the greatest ease, though the bar be ever so large and heavy. The second is the header at the end of every bar, thus absolutely protecting the bar from all obstructions of coal and clinkers, that otherwise might get at the end of the bar and stop it's working. This header also affords plenty of expansion and contraction room for the bars. The first set of these bars ever made has been in constant use for some four and one-half years, without any expense except first cost, and the party using them prefers them to any other bar in use.

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## RAILROAD, TRAMWAY AND CANAL DIVIDEND STATEMENT.

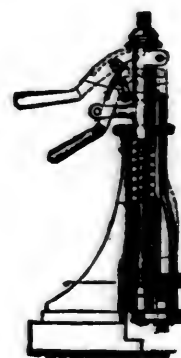
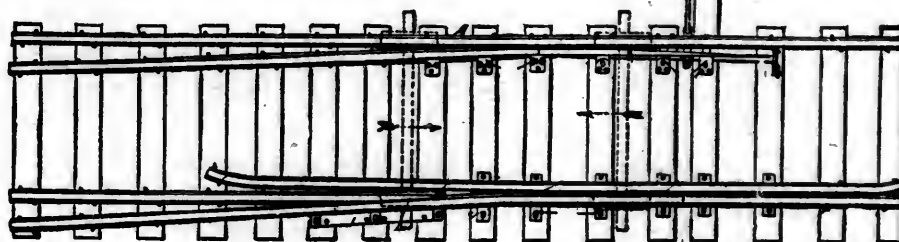
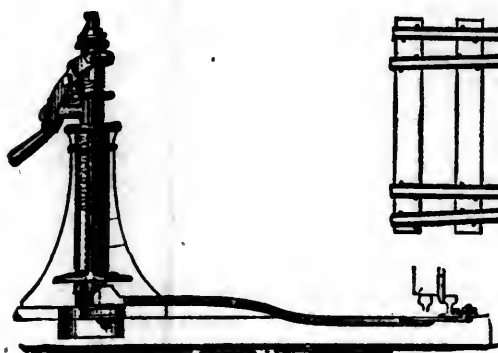
Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2	Little Miami.....50	4,637,300	q'arterly	Mar. '83 2	Ware River*.....100	750,000	semi-an.	Jan. '83 3 1/2
Atch., Top. and S. Fei...100	54,000,000	q'arterly	Feb. '83 1 1/2	Little Rock & Ft. S...100	4,096,135	.....	July '81 108	Warren (N. J.).....100	1,800,000	semi-an.	Oct. '82 3 1/2
Atlanta and W. Point...100	1,232,200	semi-an	Feb. '83 6	Little Schuylkill*...50	2,046,100	semi-an.	Jan. '83 3 1/2	Warwick Valley.....100	340,000	semi-an.	July '82 2 1/2
Atlantic and St. Law*...100	5,840,000	semi-an	Mar. '83 3	Long Island.....50	10,000,000	q'arterly	Feb. '83 1	Westchester & Phil. pref.100	821,300	semi-an.	July '80 2
Augusta and Savan*...100	1,022,900	semi-an	Dec. '82 3 1/2	Louisville & Nashv...100	25,000,000	semi-an.	Feb. '82 3	West Jersey.....100	1,359,750	semi-an.	Mar. '83 3 1/2
Avon, Genesee & M*...100	225,000	semi-an	Jan. '82 3	Lowell & Andover...100	500,000	semi-an.	Jan. '83 3 1/2	Wilmington & Weld n.100	1,456,200	semi-an.	Jan. '83 3
Baltimore and Ohio...100	14,792,566	semi-an	Nov. '82 5	Lykens Valley.....100	600,000	q'arterly	Jan. '83 2 1/2	Will. Col. & Aug. n.100	960,000	semi-an.	Jan. '83 3
" pref.100	5,000,000	semi-an	Jan. '83 3	Maine Central.....100	3,603,300	semi-an.	Feb. '82 2 1/2	Winchester & Poto c.*100	180,000	semi-an.	Jan. '83 3
Washington Br.....100	6,000,000	semi-an	Nov. '82 5	Manchester & Law...00	1,000,000	semi-an.	Nov. '82 5	Winchester & Strasb.*100	74,700	semi-an.	Jan. '83 3
Berkshire.....100	1,650,000	q'arterly	Apr. '82 1 1/2	Manhattan.....100	13,000,000	.....	.....	Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1 1/2
Boston and Albany...100	20,000,000	q'arterly	Mar. '83 2	" 1st pref.100	6,500,000	q'arterly	Apr. '83 1 1/2	TRAMWAYS.			
Bos. & N. Y. Air Line pf.100	2,795,227	q'arterly	June '82 1	" 2d pref.100	6,500,000	q'arterly	Jan. '83 1 1/2	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos. Cl. F. & N. B. pref.100	1,750,100	semi-an	Oct. '82 3 1/2	Marq. Hout. & Ont...100	2,306,600	.....	Feb. '83 4	Baltimore City.....25	1,000,000	semi-an.	Jan. '83 3
Bos. Conc. & Mont. pf.100	800,000	semi-an	Nov. '82 3	" pref.100	2,259,026	semi-an.	Feb. '83 4	Balt., Cat. & El. Mills...50	85,000	semi-an.	Jan. '83 2 1/2
Boston and Lowell...100	3,940,000	semi-an	Jan. '82 2 1/2	Massachusetts.....100	400,000	semi-an.	Feb. '83 3	Bleeker St. & Ful. f. y.100	900,000	semi-an.	July '82 1/2
Boston and Maine...100	6,921,274	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Boston & Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Boston & Providence...100	4,000,000	semi-an	Nov. '82 4	Michigan Central...100	18,738,204	.....	Feb. '83 3	Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
Attleborough Br...100	131,700	semi-an	Jan. '83 3 1/2	Middlesex Central...100	280,000	semi-an.	Jan. '83 5	B'way & 7th Av. (N. Y.)100	2,100,000	q'arterly	Oct. '82 2
Bos. Revere & Lynn...100	419,400	semi-an	Jan. '83 3	Mill Creek & Minehill* 50	323,000	semi-an.	Jan. '83 3 1/2	B'klyn & Hunter's Pt.100	400,000	semi-an.	Oct. '82 6
Buffalo, N. Y. & Erie*...100	950,000	semi-an	Dec. '82 3	M. Hill & Schuyl. Hay* 50	4,022,500	q'arterly	Apr. '83 1 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Buff., N. Y. Phila. pref. 50	6,000,000	q'arterly	Mar. '83 1 1/2	Missouri Pacific.....100	28,169,800	q'arterly	Feb. '80 2 1/2	Bushwick (Brooklyn)100	309,000	semi-an.	Oct. '82 6
Camden & Atlantic...50	377,400	q'arterly	Nov. '82 4	Mobile & Montgomery100	3,022,517	semi-an.	Jan. '83 3 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
" pref. 50	880,650	q'arterly	Nov. '82 4	Morris and Essex...50	15,000,000	semi-an.	Jan. '83 6	Can. Park, N. & E. Riv.100	1,800,000	q'arterly	Oct. '82 6
Camden & Burl. Co...100	381,925	semi-an	Jan. '83 3	Mt Carbon & Pt Carbon 50	282,350	semi-an.	Nov. '82 4	Christoph'r & Tenth St.100	650,000	semi-an.	Aug. '82 2 1/2
Canada Southern.....100	15,000,000	.....	Feb. '81 2 1/2	Nashua and Lowell...100	800,000	semi-an.	Oct. '82 1 1/2	Citizens' (Phil.).....50	192,500	q'arterly	Jan. '82 3 1/2
Cape May & Millville* 50	447,000	semi-an	Dec. '82 3	Nashua & Rochester...100	1,305,800	semi-an.	Dec. '82 3	Citizens' (Pbg.).....50	200,000	annual.	.....'80 14 1/2
Catawissa*.....50	1,159,500	annual	Oct. '82 2 1/2	Nashv. & Decatur...100	1,827,000	semi-an.	Dec. '82 3	Coney Island & Bklyn100	500,000	semi-an.	Oct. '80 5
" pref. 50	2,200,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis 25	6,670,325	semi-an.	Apr. '82 1 1/2	Continental (Phil.)...50	580,000	semi-an.	Jan. '83 6
" new pref. 50	1,000,000	semi-an	Nov. '82 3 1/2	Natungatung.....100	2,000,000	semi-an.	Jan. '83 5	D. Dock, E. B'way & Batro100	1,200,000	q'arterly	Aug. '82 4
Cayuga and Susq*...50	589,110	semi-an	Jan. '83 4 1/2	Natungatung Val'y* 50	1,300,000	q'arterly	Jan. '83 1	Eighth Av. (N. Y.)...100	1,000,000	q'arterly	Oct. '82 3
Cedar Rapids & Mo. R.100	6,850,400	q'arterly	Feb. '83 1 1/2	N. Castle & Beaver Val* 50	600,000	q'arterly	Jan. '83 1	42d St. & G. St. Ferry100	747,000	semi-an.	May '82 6
" pref.100	769,600	semi-an	Feb. '83 3 1/2	New London North n.100	1,500,000	q'arterly	Jan. '83 1 1/2	Frankf. & Southw. (Ph) 50	600,000	q'arterly	Oct. '82 6
Central of Georgia...100	7,500,000	semi-an	Dec. '82 4	N. Y. Cen. & Hud. R.100	89,428,330	q'arterly	Apr. '83 2	Germantown, (Ph.)...50	1,540,902	q'arterly	Jan. '83 2 1/2
Central of New Jersey100	18,563,200	q'arterly	July '76 2 1/2	N. Y. and Harlem...100	7,950,000	q'arterly	Jan. '83 4	Girard College (Ph.)...50	500,000	semi-an.	July '71 3
Central Ohio*.....50	2,437,950	semi-an	Jan. '83 3	" pref.100	1,500,000	q'arterly	Jan. '83 4	Grand St. & Newton...100	170,091	semi-an.	July '81 2 1/2
" pref. 50	411,550	semi-an	Jan. '83 3	" City Line.....100	10,000,000	q'arterly	Apr. '83 1 1/2	Green & Coates St. (Ph) 50	708,650	q'arterly	Jan. '83 3
Central Pacific.....100	59,275,500	semi-an	Feb. '83 3	N. Y., Lack. & West...100	77,087,600	.....	.....	Heston, Mantau & F m 50	299,381	semi-an.	Jan. '75 4
Cheshire preferred...100	2,155,300	semi-an	Jan. '83 1 1/2	N. Y., Lake Erie & West.100	77,087,600	annual.	Jan. '83 6	Highland.....100	600,000	semi-an.	Jan. '83 4
Chicago and Alton...100	11,181,741	semi-an	Mar. '83 4	" pref.100	7,987,500	semi-an.	Jan. '83 5	Lomb. & South Sts (Ph) 25	195,000	semi-an.	Oct. '75 4
" pref.100	2,245,400	semi-an	Mar. '83 4	N. Y., N. H. & Hart...100	15,500,000	q'arterly	Mar. '83 12	Lynn and Boston...100	200,000	semi-an.	Nov. '82 4
Chi., Burl. & Quincy...100	69,508,105	q'arterly	Mar. '83 2	N. Y., Ont. & West...100	2,000,000	q'arterly	Feb. '83 2	Malden and Melrose...100	165,000	.....	.....
Chi., Iowa & Nebrac*...100	3,916,200	semi-an	Jan. '83 4	N. Y., Prov. & Boston100	3,000,000	q'arterly	Oct. '82 3	Metropolitan (Bost.) 50	1,500,000	semi-an.	Jan. '83 4
Chi., Mil. & St. Paul.100	20,404,261	semi-an	Apr. '83 3 1/2	Niag. Bridg. & Canand*100	1,000,000	semi-an.	Mar. '83 3	Middlesex (Boston)100	650,000	semi-an.	Nov. '82 3 1/2
" pref.100	14,401,481	semi-an	Apr. '83 3 1/2	North Carolina*...100	3,000,000	semi-an.	Mar. '83 3	N. Y., Bay Ridge & Jam100	150,000	.....	Oct. '78 7
Chi. & N. Western...100	14,988,257	semi-an	Dec. '82 3 1/2	" pref.100	1,000,000	q'arterly	Dec. '82 1	Ninth Av. (N. Y.)...100	797,320	.....	.....
" pref.100	21,255,353	q'arterly	Mar. '83 2	Norfolk & Western pref.100	15,000,000	q'arterly	Feb. '83 1 1/2	Orange & Newark.....100	282,555	.....	.....
Chi., R. I. & Pacific...100	41,960,000	q'arterly	May '83 1 1/2	Northern Pennsylvania. 50	4,527,150	semi-an.	Jan. '83 4	People's (Phila.) pref. 25	115,250	.....	July '82 2
Chi. and West Mich...100	6,151,000	semi-an	Feb. '83 3	Northern Central...50	6,142,000	semi-an.	Jan. '83 4	Philadelphia City...50	475,000	semi-an.	July '82 4
Chi., St. P., M. & O. pref.100	10,390,000	q'arterly	Apr. '83 1 1/2	Northern N. Hampsh...100	3,068,400	semi-an.	Dec. '82 3	Phila. and Darby...20	200,000	semi-an.	July '81 3 1/2
Cin., Ham. & Dayton...100	3,500,000	semi-an	Jan. '83 3	Northern Pacific pref.100	41,909,132	.....	Jan. '83 11	Phila. & Grey's Ferry...50	308,000	semi-an.	Jan. '82 6
C. Ind., St. L. & Chi...100	6,000,000	q'arterly	Jan. '83 1 1/2	Norwich & Worcester*100	2,604,400	q'arterly	Apr. '83 1 1/2	Pbg. Alleg. & Manches. 50	300,000	q'arterly	Oct. '81 3
Cin., Sand. & Clev. pf. 50	429,037	semi-an	Nov. '82 3	Oregon & Transcontl.100	40,000,000	semi-an.	Jan. '83 3 1/2	Ridge Avenue (Ph.)...50	420,000	semi-an.	Oct. '81 11
Clev. Col. Cin. & Ind.100	14,991,800	.....	Feb. '83 2	Old Colony.....100	7,333,800	semi-an.	Mar. '83 3 1/2	Second Avenue (N. Y.)100	1,199,500	semi-an.	July '82 4
Clev. and Pittsburg* 50	11,244,336	q'arterly	Mar. '83 1 1/2	Oregon Improv. Co...100	5,000,000	q'arterly	Feb. '83 2 1/2	Second & Third St. (Ph) 50	771,076	q'arterly	Jan. '83 4
Columbus & Xenia*...50	1,780,200	q'arterly	Mar. '83 2	Oregon R'way & Nav...100	18,000,000	q'arterly	Feb. '83 4 1/2	17th & 19th sts (Ph.)...50	250,000	semi-an.	July '81 3
Col., Hock. Val. & Tol.100	1,316,500	.....	Jan. '83 2 1/2	Oswego & Syracuse...100	1,320,400	semi-an.	Feb. '83 6 1/2	Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82 5
Concord.....50	1,500,000	semi-an	Nov. '82 5	Panama.....100	7,000,000	semi-an.	Jan. '83 4 1/2	Somerville (Boston)100	113,000	semi-an.	Nov. '82 3
Concord and Ports*...100	350,000	semi-an	Jan. '83 3 1/2	Paterson & Hudson...100	630,000	semi-an.	July '82 4	South Boston.....50	600,000	semi-an.	Jan. '83 4
Conn. & Passump. Riv.100	2,244,400	semi-an	Jan. '83 3	Paterson & Ramapo...100	248,000	semi-an.	Jan. '83 3	Third Avenue, N. Y...100	2,000,000	q'arterly	Aug. '82 3
Connecticut River...100	2,100,000	semi-an	Jan. '83 4	Pember & Hightst n*...50	342,150	semi-an.	Nov. '82 4 1/2	13th and 16th sts. Ph 50	334,529	q'arterly	Jan. '83 4
Cumberland Valley...50	1,292,950	q'arterly	Apr. '83 2 1/2	Pennsylvania.....50	83,786,570	semi-an.	Dec. '82 4	23d street, N. Y.....100	600,000	semi-an.	Aug. '82 4
" 1st pref. 50	241,000	semi-an	Apr. '83 4	Pennsylvania Co...50	20,000,000	annual	Dec. '82 4	Union, Boston.....100	374,300	semi-an.	Jan. '82 4
" 2d pref. 50	243,000	semi-an	Apr. '83 4	Peoria & Bureau Val*100	1,200,000	semi-an.	Feb. '83 4	Union, Phila.....50	1,005,000	semi-an.	Jan. '82 7
Danbury & Norwalk...50	600,000	semi-an	Apr. '83 2 1/2	Philadelphia & Erie*...50	7,013,700	semi-an.	Jan. '75 4	West Philadelphia...50	750,000	semi-an.	July '77 10
Dayton and Mich.*...50	2,402,573	semi-an	Apr. '83 1 1/2	" pf. 50	2,400,000	semi-an.	Dec. '82 3	CANALS.			
" pref. 50	1,211,250	q'arterly	Jan. '83 2	Phil. Ger. & Norrist n* 50	2,231,900	q'arterly	Jan. '76 2 1/2	Chesapeake and Dela 50	2,078,038	semi-an.	June '75 2
Delaware*.....25	1,468,940	q'arterly	Jan. '83 3	Phil. and Reading...50	32,726,375	q'arterly	July '76 3 1/2	Delaware Division...50	1,633,350	semi-an.	Feb. '83 3
Del. & Bound Brook*100	1,652,000	q'arterly	Feb. '83 1 1/2	" pref. 50	1,551,800	q'arterly	Apr. '82 1/2	Delawa. and Hudson100	20,000,000	q'arterly	Mar. '83 1 1/2
Del., Lack. & Western 50	26,200,000	q'arterly	Jan. '83 2	Phila. and Trenton...100	1,250,100	semi-an.	Jan. '83 4	Delaware & Raritan*...100	5,847,400	q'arterly	Apr. '83 2 1/2
Denver & Rio Grande...100	29,160,000	q'arterly	Jan. '82 1 1/2	Phila., Wil. and Balt. 50	11,585,750	q'arterly	Jan. '83 1 1/2	Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82 2
Detroit, Lana. & Nor.100	1,825,600	semi-an	Feb. '83 3	Pittsb. Ft. W. & Chi...100	19,714,285	q'arterly	Jan. '83 1 1/2	Monongahela Nav...50	1,004,500	semi-an.	Jan. '83 3 1/2
" pref.100	2,503,380	semi-an	Feb. '83 3 1/2	" Special Imp.100	6,770,900	semi-an.	Jan. '83 2 1/2	Morris, consolidated.100	1,025,000	semi-an.	Feb. '83 2
Dubuque & Sioux C'y*100	5,000,000	semi-an	Apr. '83 3	Pittsfield & N. Adams.100	450,000	semi-an.	Jan. '83 3	" preferred.....100	1,175,000	semi-an.	Feb. '83 5
East Pennsylvania*...50	1,709,550	semi-an	Jan. '83 3	Portl., Saco & Portsmouth100	1,500,000	semi-an.	Jan. '83 3	Pennsylvania.....50	4,501,200	.....	.....
East Mahanoy*.....50	392,950	semi-an	Jan. '83 3	Providence & Worces.100	2,000,000	semi-an.	Jan. '83 3	Schuyl. Nav., com.* 50	859,100	annual.	Oct. '82 50c.
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Rensselaer & Saratog.100	7,000,000	semi-an.	Jan. '83 4	" pref. 50	3,200,000	annual.	Oct. '82 \$1
Eel River.....100	3,000,000	q'arterly	Mar. '83 1	Richmond & Danv...100	5,000,000	q'arterly	Aug. '82 2	MISCELLANEOUS.			
Elmira & Williams p't* 50	500,000	semi-an	Nov. '82 1 1/2	Richmond & Petersbro100	1,009,300	semi-an.	Aug. '82 2	Adams Express.....100	12,000,000	q'arterly	Dec. '82 2
" pref. 50	500,000	semi-an	Jan. '83 3 1/2	Roch. & Genesee Val.*100	555,200	semi-an.	Jan. '83 3	American Express...50	18,000,000	semi-an.	Jan. '83 3
Erie and Pittsburg*...50	1,998,400	q'arterly	Dec. '82 1 1/2	Rome Water &amp							

# THE RAMAPO IRON WORKS,

MANUFACTURERS OF

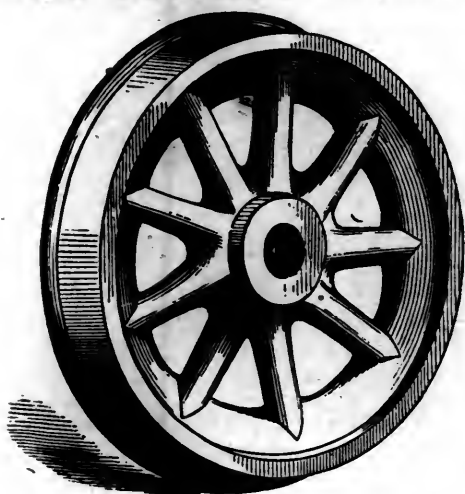
**The Tracy Safety Switch,** Safety Switch Stands and Stub Switch Stands; Keyed, Riveted, and Bolted Frogs of all Weights and Patterns. A specialty of an Elastic Yoked Stiff Frog and Spring Frog of the Tracy Pattern; Reversible and Interchangeable Double and Single Rail Crossings of any desired Pattern; Car, Bridge, and Turn Tables, Heavy and Light Castings, and **General Railroad Equipment.**



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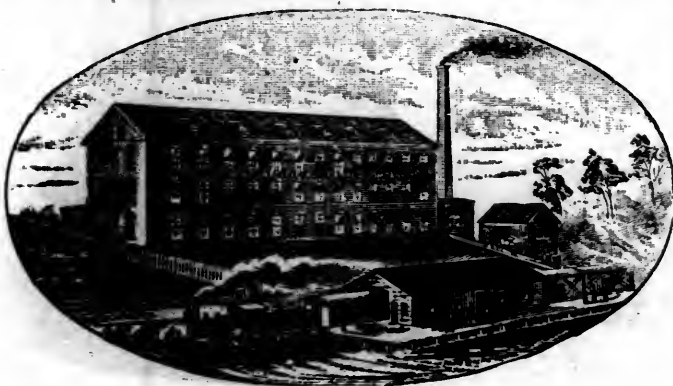


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It is unaffected by HEAT or COLD, and is impervious to OIL or WATER.

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Requiring no other Connection  
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Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

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One Second-hand "Tank" Narrow-Gauge Engine, 10 tons. Several Second-hand Standard-Gauge Locomotives in good order, immediate delivery.

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Cars—Passenger and Freight Cars of all descriptions for early delivery.

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## THE SALMON CAR HEATER



"38 per cent of coal saved and the car kept noticeably warmer!"

by using THE SALMON CAR HEATER.

It Insures Safety from Fire in case of Accident,

Economy in Fuel and RAPID CIRCULA-

TION. It heats quickly, is SELF-REGULA-

TING, and can be used for

either STEAM OR HOT WATER.

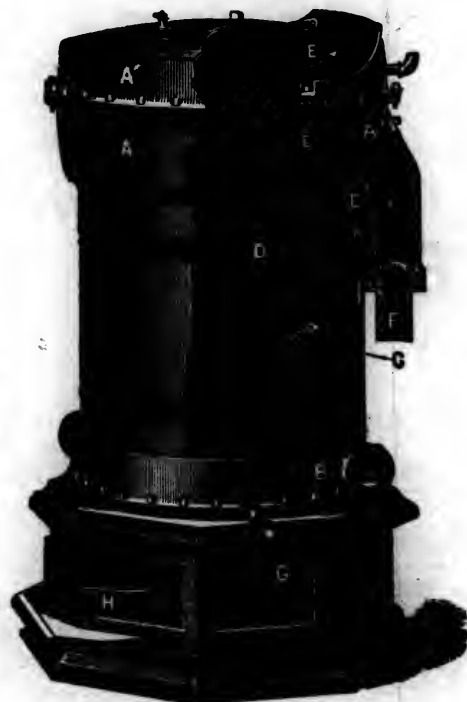
The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low State of combustion without danger of chilling the fire.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

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## FINANCIAL DEPARTMENT.

## FINANCIAL REVIEW.

WEDNESDAY EVENING, MARCH 28, 1883.

THE rates for money on call this forenoon on stocks were 7 to 8 per cent; after 12.30 the rates remained the same, but in the last hour of business call loans were made at 5 per cent.

The posted rates for foreign exchange were 4.81½ for sixty days and 4.84 for demand. The actual rates were 4.80½@¾ for sixty days, 4.83½@¾ for demand, and 4.83½@¾ for cables; commercial bills were in moderate supply at 4.79@4.79½. Continental bills were as follows, viz.: Francs, 5.24½@5.23½ and 5.21½@5.21½; Reichsmarks, 94@94½ and 94½@¾; Guilders, 39 3-16 and 40 1-16.

Applications were invited on the 15th inst. by Messrs. Morton, Rose & Co., of London, England, for an issue of £600,000 in £20 shares, bearing interest at 7 per cent per annum, for the construction of the Southern Brazilian Rio Grande do Sul Railway—the Brazilian Government guaranteeing £106,481 per annum for thirty years. The proposed line will run from the city of Rio Grande do Sul to Bage, the length being 175 miles. The subscription list was open only one day, thus indicating the favor with which the undertaking was regarded by the public.

The gross receipts of the Philadelphia and Reading Railroad Company for February were \$1,453,862.34, of which \$1,405,267.39 was derived from railroad traffic, \$2,821.03 from canal traffic, \$43,041 from steam colliers, and \$2,732.92 from Richmond coal barges. The expenses were \$827,766.99, leaving net earnings of \$626,095.35, an increase of \$210,003.34 as compared with the corresponding month last year. The receipts of the Coal and Iron Company were \$923,318.58, the expenses \$919,333.07, and the net \$3,985.51. The net earnings of both companies for the month were \$630,080.86, an increase of \$191,424.73 as compared with the corresponding month last year. The net earnings for the fiscal year ending February 28 were \$2,138,741.93, an increase of \$115,629.63 as compared with the corresponding period last year.

The forty-seventh report of George M. Dallis, the master under the receivership of the Philadelphia and Reading Railroad and Coal and Iron Companies, shows that the balance on hand February 1, 1883, was \$7,189.35; the receipts during the month were \$2,569,045.89, and the balance transferred to the managers of the Philadelphia and Reading Railroad Company at the close of the month, when the receivership was practically terminated, was \$118,417.25. The balance on hand on account of the deferred income bonds, which was also handed over to the managers, was \$12,034.69. The receipts of the Coal and Iron Company during February, including a balance of \$19,047.32 carried over, were \$1,007,224.26, and the balance transferred by the receivers to the managers at the end of the month was \$52,606.62. The master states that "this report will be followed immediately by the forty-eighth report of the master—as to the comple-

tion of the surrender and transfer of possession—and reference is made to that (the forty-eighth) report for a statement of the purpose of the master as to finally vouching the items still remaining unvouched, in all amounting to \$17,534.69."

The statement of the business of all lines of the Pennsylvania Railroad Company east of Pittsburgh and Erie for February, as compared with the same month in 1882, shows an increase in gross earnings of \$405,465, an increase in expenses of \$148,392, and an increase in net earnings of \$257,073. The two months of 1883, as compared with the same period of 1882, show an increase in gross earnings of \$961,501, an increase in expenses of \$307,636, and an increase in net earnings of \$653,865. All lines west of Pittsburgh and Erie, for the two months of 1883, show a surplus over all liabilities of \$10,205, being a gain as compared with the same period of 1882 of \$67,654.

The Italian Government has decided to resume specie payments on the 12th of April, and to provide for this event has secured \$83,495,000 in gold from the following sources: Italy, \$16,025,000; United States, \$14,600,000; Germany, \$13,450,050; France, \$12,900,000; England, \$10,300,000; Austria, \$7,500,000; Russia, \$5,045,000; Australia, \$2,000,000; Denmark, \$1,100,000; Belgium, \$450,000; Spain, \$125,000. On the date of resumption all two franc notes and under will be paid in silver, and cancelled as they are received. The five franc notes will also be retired. In the event of gold leaving the country, a safeguard will be established by the law demanding the payment of all customs duties in gold. Italy suspended payment in 1866. The circulation of government and bank legal tender notes amounts to about 1,625,000,000 francs, or \$325,000,000.

The forty-eighth report of George M. Dallis, special master under the Receivership of the Philadelphia and Reading Railroad Company has been filed in the United States Circuit Court, Philadelphia. It relates to the completion of surrender and transfer of possession by the receivers of the property in their custody, in pursuance of the decree of the 14th of February. He gives \$118,417.25 as the cash balance of the railroad company and \$52,606.62 as that of the Coal and Iron Company handed over by the receivers to the managers on the 28th of February. There are still items unvouched amounting to \$17,534.69, "the absence of which," says the report, "is not in any manner chargeable to any default or neglect on the part of the receivers or their employes, but is due solely to the necessary delay incident to the transaction of such a business." In the testimony relating to the transfer of the property appended to the report, John E. Wootten, the general manager, states that the property is in a very much better condition than at the beginning of the receivership; that the value of the rolling-stock is about 6 per cent greater, and the total increase in the value of the equipment is about \$800,000.

The act making a new settlement of the Tennessee State debt, having passed both branches of the Legislature and received the signature of the Governor, is now a law. The following is a recapitulation of its main features which,

now that it has assumed its final shape, will be of interest. The "State debt proper" bonds, aggregating about \$2,118,000, are to be funded, with interest accrued (less four years) to July 1, 1883, in new bonds bearing the same ratio of interest borne by the original bonds, that is to say, 6, 5½ and 5 per cent interest, respectively. All other bonds, embracing \$8,583,000 anti-war railroad bonds, \$2,638,000 post-war railroad bonds, \$2,246,000 funded in 1867, \$569,000 funded in 1868, and \$4,867,000 funded in 1873, are to be funded in new bonds, representing 50 per cent of the face of each bond, together with 50 per cent of the interest accrued up to July 1, 1883. As for the bonds funded in 1882, their treatment is different. To the sum of the face of each bond will be added the coupons, now matured, thereto attached, including the coupons maturing July 1, 1883, and five-sixths of such total amount is to be funded into coupon bonds bearing 3 per cent interest, exception of course being made of such bonds as can be traced to the "State debt proper."

At a meeting of the directors of the Lake Shore and Michigan Southern Railway Company held in this city on the 27th inst., the regular quarterly dividend of 2 per cent was declared, payable May 1. The transfer-books will be closed from March 30 to May 4.

The directors of the Michigan Central Railroad Company, at their meeting on the 27th inst., passed the following explanatory preamble and resolution:

*Whereas*, The agreement between the Michigan Central Railroad Company and the Canada Southern Railroad Company, under date of December 12, 1882, provides for semi-annual accounts of the business of the two companies, and although the earnings of the two companies for the quarter ending March 31, 1883, are sufficient to pay a dividend on their respective capital stocks, it is considered most advantageous to the interest of both companies that the dividends should hereafter be paid semi-annually; therefore,

*Resolved*, That hereafter the dividends of this company be payable on or about Aug. 1 and Feb. 1 in each year.

The Acting Secretary of the Treasury at Washington gave notice on the 27th inst. that on Wednesday, April 4, 1883, and on each of the following Wednesdays, United States bonds embraced in the 120th call will be redeemed at the Treasury Department in Washington to the amount of \$5,000,000, with interest to the date of payment. Bonds presented at the department at 10 o'clock, A. M. on the day before each day named for redemption will be paid in the order of their presentation, and if an excess of \$5,000,000 be presented on either day such excess will be first paid on the next redemption day. Parties transmitting bonds for redemption should address them to the "Secretary of the Loan Division, Washington, D. C.," and the bonds should be assigned to the "Secretary of the Treasury for redemption." Where checks in payment are desired in favor of any one but the payee the bonds should be assigned to the "Secretary of the Treasury for redemption for account of —." (Here insert the name of the person or persons to whose order the check should be made payable.)

The Little Schuylkill Railroad Company, has paid off all its mortgage indebtedness.



## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Mar. 27.

	W.21.	Th.22.	F.23.	Sat.24.	M.26.	Tu.27.
Adams Express.....	123 1/2	128				
Albany and Susq.....						
1st mortgage.....						
2d mortgage.....						
American Express.....	90	91	89	91	89	
Burl. C. R. & Nor.....						
1st mortgage 5s.....	100 1/2	100 1/2				
Canada Southern.....	66 1/2	67	66 1/2	67	66	
1st mortgage guar.....	95 1/2	96	95 1/2	95 1/2		
Canadian Pacific.....						
Central of N. Jersey.....	71 1/2	71 1/2	72	71 1/2	71 1/2	
1st mort. 1800.....						
7s, consol. ann.....						
7s, convertible ann.....	111 1/2	113				
7s, Income.....	105 1/2	106 1/2				
Adjustment.....						
Central Pacific.....	80 1/2	79 1/2	78	76 1/2	75 1/2	
6s, gold.....						
1st M. (San Joaquin).....						
1st M. (Cal. & Or.).....						
Land grant 6s.....						
Chesapeake & Ohio.....						
1st pref.....	32	32 1/2	32 1/2			
2d pref.....						
1st mort., series B.....	91 1/2	9 1/2		91 1/2	91 1/2	
Chicago and Alton.....						
Preferred.....						
1st mortgage.....						
Sinking Fund.....						
Chi., Bur. & Quincy.....	121	121 1/2	122 1/2	122 1/2	121 1/2	
7s, Consol. 1000.....						
Chi., Mil. & St. Paul.....	101 1/2	101 1/2	102 1/2	98 1/2	98 1/2	
Preferred.....	119	119 1/2	120	119 1/2		
1st mortgage, 8s.....						
2d mort., 7 3/4.....						
7s, gold.....						
1st M. (I. A. C. div.).....						
1st M. I. & M. div.).....						
1st M. (I. & D. ext.).....						
1st M. (H. & D. div.).....						
1st M. (C. & M. div.).....						
Consolidated S. F.....	122					
Chi. & Northwestern.....	132 1/2	132 1/2	132 1/2	132 1/2	132 1/2	
Preferred.....	145	146		146 1/2	146 1/2	
1st mortgage.....						
Sinking Fund 6s.....	112 1/2					
Consolidated 7s.....	131 1/2			131		
Consol. Gold bo'ds.....				124 1/2	124 1/2	
Do. reg.....						
Chi., R. Isl. & Pac.....	121 1/2	122 1/2	123 1/2	123 1/2	123 1/2	
6s, 1017, C.....	124	123 1/2		124 1/2		
Chi., St. P. Minn. & O.....	48 1/2	48 1/2	48	47 1/2	47 1/2	
Preferred.....	107 1/2	107 1/2		107	107	
Clev., Col., Cin. & Ind.....						
Clev. & Pittsburg gr.....	139 1/2			139	139 1/2	
7s, Consolidated.....						
4th mortgage.....						
Col., Chi. & Ind. Cent.....						
Del. & Hud Canal.....	107 1/2	108 1/2	108	108 1/2	107 1/2	
Reg. 7s, 1891.....	113 1/2	113 1/2				
Reg. 7s, 1884.....						
7s, 1894.....						
Del., Lack. & Western.....	123 1/2	124 1/2	124 1/2	124 1/2	124	
2d mortgage 7s.....						
Consol. 1907.....						
Erie Railway.....						
1st mortgage.....						
2d mort. 5s, ext.....				106 1/2		
3d mortgage.....						
4th mort. 5s, ext.....						
5th mortgage.....						
7s, Consol. gold.....	125 1/2					
Great West. 1st mort.....						
2d mortgage.....	100		100 1/2			
Hannibal & St. Jo.....						
Preferred.....	81	78 1/2				
8s, Convertible.....	104			104 1/2	104 1/2	
Houston & Tex. Cen.....						
1st mortgage.....	109 1/2		109		109	
2d mortgage.....						
Illinois Central.....	144 1/2			144 1/2	144 1/2	
Lake Shore & Mich So.....	109 1/2	110 1/2	110 1/2	110 1/2	110	
Consol. 7s.....						
Consol. 7s, reg.....						
2d Consolidated.....	120			120		
Lsh. & W. B. con. ass.....	102 1/2			102		
Long Dock bonds.....						
Louisville & Nash.....	54 1/2	54 1/2	54 1/2	54	53 1/2	
7s, Consol. reg.....						
Manhattan.....	42	40	43 1/2	42 1/2		
1st pref.....		85				
Met. Elevated.....						
1st mortgage.....	96 1/2	96 1/2	96 1/2	96 1/2	96 1/2	
Michigan Central.....	94 1/2	94 1/2	93 1/2	93 1/2	92 1/2	
7s, 1902.....						
Minn. & St. Louis.....						
Preferred.....				27	26	
				57 1/2		

Morris & Essex.....	124		136 1/2		122 1/2	
1st mortgage.....	137 1/2				135	
2d mortgage.....	112 1/2					
7s of 1871.....						
7s, Convertible.....						
7s, Consolidated.....	12 1/2					
N. Y. Cen. & Hud. R.....	125 1/2	125 1/2	125 1/2	125 1/2	125 1/2	
6s, S. F. 1883.....	104 1/2	105	104 1/2	104 1/2	104 1/2	
6s, S. F. 1887.....						
1st mortgage.....	130 1/2	130				
1st mortgage, reg.....						
N. Y. Elevated.....						
1st mortgage.....				116	116	
N. Y. & Harlem.....						
1st mortgage.....						
1st mortgage, reg.....						
N. Y. Lake Erie & W.....	37 1/2	37 1/2	37 1/2	37 1/2	37	
Preferred.....						
2d Consolidated.....	96	96	96 1/2	96 1/2	96 1/2	
New 2d 5s fund.....						
N. Y. N. Hav'n & Hart.....						
North Mo. 1st mort.....						
Northern Pacific.....	50 1/2	50 1/2	50 1/2	50 1/2	50 1/2	
Preferred.....	86 1/2	86 1/2	86 1/2	86 1/2	86	
Ohio & Mississippi.....						
2d mortgage.....				123		
Consolidated 7s.....						
Consol. S. Fund.....						
Pacific Mail S. S. Co.....	40 1/2		40 1/2	40 1/2	40 1/2	
Pacific R. R. of Mo.....		40 1/2				
1st mortgage.....					105 1/2	
2d mortgage.....						
Panama.....						
Phila. & Reading.....	52 1/2	53 1/2	53	52 1/2	52 1/2	
Pitts. Ft. W. & Chi. gtd.....	137 1/2			136 1/2		
1st mortgage.....				133		
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car.....	122 1/2		120 1/2	122	120	
Quicksilver Min'g Co.....						
Preferred.....				42		
St. Louis & San Fran.....						
Preferred.....						
1st Preferred.....						
St. L., Alt'n & T. H.....	62 1/2	63		70 1/2	69	
Preferred.....		99				
1st mortgage.....						
2d mort. pref.....						
Income bonds.....	106					
St. L., Iron Mt. & S.....						
1st mortgage.....						
2d mortgage.....						
Toledo and Wabash.....						
1st mortgage.....						
2d mortgage.....						
7s, Consolidated.....	92					
St. Louis Division.....						
Union Pacific.....	96	96 1/2	96 1/2	96 1/2	95 1/2	
1st mortgage.....	114 1/2	114 1/2	114 1/2	114 1/2		
Land Grant 7s.....						
Sinking Fund 8s.....			116			
United States Ex.....	60					
Wabash, St. L. & Pac.....	28 1/2	29 1/2	29 1/2	29 1/2	28 1/2	
Preferred.....	48 1/2	49 1/2	49 1/2	49 1/2	48 1/2	
New mort. 7s.....						
Wells-Fargo Ex.....	123 1/2					
Western Pacific b'ds.....			110 1/2		109 1/2	
Western Union Tel.....	82 1/2	82 1/2	82 1/2	82	82	
7s, S. F. conv., 1900.....						
FEDERAL STOCKS:—						
U. S. 4s, 1907, reg.....	119			119		
U. S. 4s, 1907, coup.....		120 1/2		120 1/2		
U. S. 4s, 1891, reg.....	112 1/2			113		
U. S. 4s, 1891, coup.....	120			112 1/2		
U. S. 5s, cont'd at 3 1/2.....						
U. S. 3s, reg.....	103 1/2			103 1/2	103 1/2	
Dt. of Col. 3-65s, reg.....						
Dt. of Col. 3-65s, coup.....						

## Boston Stock Exchange.

Closing Prices for the Week Ending Mar. 27.

	W.21.	Th.22.	F.23.	Sat.24.	M.26.	Tu.27.
Atch., Top. & San. Fe.....	81 1/2	81 1/2	82	82	81 1/2	
1st mortgage.....	119	119	119 1/2			
Land Grant 7s.....					111 1/2	
Boston & Albany.....	174 1/2				174 1/2	
Boston and Lowell.....	95					
Boston & Maine.....			160	160	160	
Boston & Providence.....				164		
Bos'n, Hart. & Erie 7s.....						
Burl. & Mo. R. L. G. 7s.....						
Burl. & Mo. R. in Neb.....						
6s, exempt.....						
48.....						
Chi., Burl. & Quincy.....	121 1/2	121 1/2	122	122 1/2	122	
Cin., Sand & Clev (\$50).....						
Concor (\$50).....			101 1/2	101 1/2		
Connecticut River.....						
Eastern.....	48	47 1/2	47 1/2	46 1/2	46 1/2	
New 6s, Bond.....	112 1/2		112 1/2			

Fitchburg.....	120		120	120		
N. Y. & New England.....	45 1/2	46 1/2			45 1/2	
7s.....		114 1/2			114 1/2	
Northern N. H.....			110 1/2			
Norwich & Worcester.....						
Ogden & Lake Cham.....						
Old Colony.....	133 1/2		133		132 1/2	
Ph., Wil. & Balt. (\$50).....						
Portl'd, Saco & Ports.....						
Pueblo & Ark Val 7s.....						
Pullman Palace Car.....	121			122	122	
Union Pacific.....	96	96 1/2	96 1/2	96 1/2	95 1/2	
6s.....				112 1/2		
Land Grant 7s.....						
Sinking Fund 8s.....	115 1/2	115 1/2			115 1/2	
Vermont & Mass.....						
Worcester & Nashua.....						
Cambridge (Horse).....						
Metropolitan (Horse).....	70					
Middlesex (Horse).....						
Cal. & Hecla Min'g Co.....	240	240	242	242		
Quincy.....			49	49 1/2	49 1/2	

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Mar. 27.

	W.21.	Th.22	F.23.	Sat. 24.	M.26.	Tu 27.
Allegh'y Val. 7 3-10s	.....	.....	.....	.....	.....	.....
7s, Income.....	.....	48	.....	.....	.....	.....
Buff., N. Y. & Phila.	15½	.....	.....	16	15½	15½
Camd'n & Am. 6s, '83	.....	.....	.....	.....	.....	.....
6s, 1889.....	.....	.....	.....	.....	.....	.....
Mort. 6s, 1889.....	.....	.....	.....	112	111½	.....
Camden & Atlantic.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Catawissa.....	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
2d pref.....	.....	.....	.....	56	55	.....
7s, new.....	.....	.....	.....	121	.....	120½
Del. & Bound Brook	.....	.....	.....	.....	.....	.....
7s.....	.....	.....	.....	.....	.....	.....
Elmira & Williamspt	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
Hunt. & B. Top Mt.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	.....	.....
2d mortgage.....	.....	.....	.....	.....	.....	.....
Lehigh Navigation.	41½	.....	.....	41½	.....	41½
6s, 1884.....	.....	.....	.....	.....	101½	.....
Gold Loan.....	112	112½	.....	.....	.....	.....
Railroad Loan...	.....	116	.....	.....	.....	.....
Conv. Gold Loan...	.....	.....	.....	.....	.....	.....
Consol. Mort. 7s.	118	.....	.....	.....	.....	.....
Lehigh Valley.....	64½	64½	.....	64½	65	64½
1st mort. 6s, coup	.....	.....	.....	123	.....	120½
1st mort. 6s, reg..	.....	.....	.....	.....	.....	120½
2d mort. 7s.....	.....	.....	.....	.....	133	.....
Consol mort. 6s..	.....	.....	.....	.....	.....	121
Consol.mtg.6s,reg	.....	.....	.....	.....	.....	.....
Little & Conaykill...	60	.....	.....	.....	60	.....
Minehill & Sch. Hav'n	.....	.....	.....	64	64	64
North Pennsylvania	68½	68½	.....	.....	.....	68½
1st mortgage 6s...	.....	103½	.....	.....	103½	.....
2d mortgage 7s...	.....	.....	.....	.....	.....	120½
Genl. mtg. 7s, coup	.....	.....	.....	.....	.....	123
Genl. mtg. 7s, reg	.....	.....	.....	.....	.....	.....
Northern Central..	.....	.....	.....	.....	55½	.....
5s.....	100½	.....	.....	101	100½	.....
Northern Pacific...	50½	50½	.....	51½	50½	50½
Preferred.....	86½	86½	.....	86½	86½	86½
Pennsylvania R. R.	61½	61½	.....	62½	62	61½
1st mortgage.....	.....	.....	.....	.....	.....	.....
Gen'l mort.....	.....	.....	.....	.....	.....	123
Gen'l mort reg..	.....	.....	.....	.....	.....	.....
Consol. mort. 6s.	.....	.....	.....	.....	.....	.....
Consol. mort. reg	.....	.....	.....	.....	.....	.....
Pa. State 5s, new...	.....	.....	.....	117	.....	.....
do 4s, new.....	.....	.....	.....	116½	116½	116½
do 3½s, 1912..	.....	.....	.....	.....	.....	120½
Phila. & Reading...	26½	26½	.....	26½	26½	26½
1st mortgage 6s...	.....	.....	.....	.....	.....	.....
7s of 1893.....	.....	.....	.....	.....	.....	.....
7s, new convert..	70	.....	.....	73	.....	.....
Consol. mort. 7s.	.....	.....	.....	125½	126	.....
Consol. mort.reg.	.....	.....	.....	125	.....	126
Gen'l mort. 6s...	95½	95½	.....	.....	95½	95½
Def. Income bonds	.....	.....	.....	.....	.....	.....
Philadelphia & Erie	20	.....	.....	.....	.....	.....
1st mortgage 5s...	.....	.....	.....	.....	105	105½
2d mortgage 7s...	.....	.....	.....	.....	.....	.....
Pittsb., Cin. & St. L. 7s	.....	.....	.....	120½	.....	.....
Pitts. Tit. & Buff. 7s,	96½	.....	.....	.....	.....	97
Schuylkill Navi't'n.	.....	.....	.....	.....	.....	.....
Preferred.....	.....	.....	.....	.....	14½	.....
6s, 1897.....	.....	.....	.....	.....	106½	.....
6s, 1907.....	.....	.....	.....	.....	90	.....
United Co. of N. J.	151½	189x	.....	189	.....	.....
Hestonville, (Horse)	.....	.....	.....	.....	.....	.....
Chestnut & Walnut.	.....	.....	.....	.....	.....	.....

## Baltimore Stock Exchange.

Closing Prices for the Week Ending Mar. 26.

Tu. 20. W. 21. Th. 22. F. 23. Sat. 24. M. 26.

Baltimore & Ohio...	199	198	198	198	198
6s, 1885.....					
Central Ohio (\$50)...					
1st mortgage.....					108½
Marietta & Cincin'ti.....					
1st mortgage, 7s.....					
2d mortgage, 7s.....					104½
3d mortgage, 8s.....					53½
Northern Cen. (\$50).....					56 55½
2d mort. 6s, 1885.....					104½
3d mort. 6s, 1900.....					
6s, 1900, gold.....					115½
6s, 1904, gold.....					
5s, series A.....					
5s, series B.....					
Pitts. & Connells. 7s.....					121½
Virginia 6s Consol.....	42	42			41½
Consol. coupons.....					44½
10-40 bonds.....	35				34
Def'd Certificates.....					
New 3s.....	50½	50½			50½
City Passenger R. R.....	50				

## London Stock Exchange.

Closing Prices—

March 9. Mar. 2.

Baltimore and Ohio 5s, 1927.....	108	110	108	110
Central of N. J., \$100 shares.....	70	75	70	75
Do. consol. mort.....	113	115	113	115
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., \$100 shs.....	83½	84½	83½	84½
Do. 1st mort. 6s, 1895-98.....	116	118	116	118
Det., G'd Haven & Mil. Equip bds.....	118	120	118	120
Do. Con. M. sp. c., till '83 after 6p. c.....	117	119	117	119
Illinois Central \$100 shares.....	148	149	148½	149½
Do. S. F. 5s, 1903.....	106	108	106	108
Lehigh Valley Cons. mort. 1923.....	115	120	115	120
Louisville and Nashville mort. 6s 96	98	98	95	97
Do. capital stock \$100 shares.....	56½	57½	55	56½
N. Y. Cen. & Hud. R. mort. bonds.....	130	135	130	135
Do. \$100 shares.....	131½	132½	130½	131½
Do. mort. bonds (stg.).....	121	123	121	123
N. Y. Lake Erie & West. \$100 shs.....	38½	39	38½	38½
Do. 6 p. c. pref. \$100 shares.....	81	83	82	84
Do. 1st Con. Mort. bonds (Erie).....	128	132	128	132
Do. do. Funded Coupon bonds.....	125	130	125	130
Do. 2d Consol. Mort. bonds.....	99	101	99	101
Do. do. Funded Coupon bonds.....	98	100	98	100
N. Y. Pa. & Ohio 1st mort. bonds.....	54	55	55	56
Do. Prior Lien bonds (sterling).....	102	105	102	105
Pennsylvania \$50 shares.....	63½	64½	63½	63
General Mortgage.....	122	124	122	124
Phil. & Erie Gen. mort. 6s, 1920.....	115	117	115	117½
Philadelphia & Reading \$50 shs.....	27½	28	27½	27
General Consol Mortgage.....	117	119	117	119
Do. Improvement Mortgage.....	107	109	106	108½
Do. Gen. Mtg. '74, ex-def'd coup.....	97	99	97	99
St. L. Bridge 1st mort. gold bond.....	124	126	124	126
Do. 1st pref. stock.....	94	98	94	98
S. P. of Cal., 1st mort 6s, 1905-6.....	108½	109	108	109
Union Pacific 1st mtg. 6s, 1896-9.....	116	118	116	118
Wabash, St. L. & P. \$100 shares.....	29½	30½	29½	30
Do. \$100 pref shares.....	49½	50½	49	50
Do. gen. mort. bonds.....	81	83	80	82½

## QUOTATIONS.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

**New York.**—Atlantic and Pacific Western div. 1st, 96½; do. inc., 21½; Buffalo and Erie 7s, new, 119; Buffalo, New York and Philadelphia 1st, 97; Columbia and Greenville pref., 46; Cedar Falls and Minn., 137; Chicago, St. Paul, Minneapolis and Omaha consol., 107; Chesapeake and Ohio 6s, 1911, 102; do. cur. 6s, 53; do. 1st, series A, 108½; Chicago, Milwaukee and St. Paul 2d mort., 105; do. S. W. div. 1st, 108; do. Southern Minn. div. 1st, 105½; do. Chicago and Pacific Western div. 1st, 93; Chicago and Northwestern S. F. 5s, 101½; Chicago, St. Louis and New Orleans 5s, 103½; Columbus, Chicago and Indiana Central inc., 73; do. reorganization cer., 74½; Cairo and Fulton 1st, 108; Central Iowa 1st, 108; Columbus, Hocking Valley and Toledo, 1st, 80; Denver and Rio Grande, 46½; do. 1st, 112; do. consol., 91½; Dubuque and Sioux City, 87; East Tennessee, Virginia and Georgia, 9; do. pref., 16½; do. inc., 33½; Evansville and Terre Haute, 68; Elizabethtown, Lexington and Big Sandy 6s, 94½; Fort Worth and Denver, 1st, 70½; Green Bay, Winona and St. Paul, 9; Gulf, Colorado and Santa Fe 1st, 112½; Hannibal and St. Joseph consol. 6s, 105; Houston and Texas Central, Waco and N. W. div., 112½; Houston, East and West Texas 1st, 102; International and Gt. Northern coup. 6s, 83; do. 1st, 108; Indiana, Bloomington and Western, 32½; do. 1st, 88; Illinois Central Leased Line, 80; Indianapolis, Decatur and

Springfield 1st, 101½; Iowa Midland 8s, 133; Kansas Pacific 6s, 1896, 109; do. 1st consol., 99½; do. 6s, Denver div. ass. 108; Lehigh and Wilkesbarre inc., 81; Lake Erie and Western, 30½; do. inc., 45; do. 1st, 98; Long Island, 62½; do. consol. 5s, 98½; Louisville and Nashville Cecellian Branch 1st, 102½; do. Louisville div. 1st, 99; do. gen'l mort. 6s, 95; do. N. O. and Mobile div. 1st, 92; Lafayette, Bloomington and Muncie 1st, 98½; Lake Shore div. bonds, 122; Louisville, New Albany and Chicago, 1st, 102; Manhattan Beach, 24½; Michigan Southern, S. F., 107; Missouri, Kansas and Texas, 30½; do. gen'l mort. 6s, 80; do. consol. 7s, 106; do. 2d, 58½; Missouri Pacific, 101½; do. 1st consol., 102½; do. 3d, 111; Mobile and Ohio, 17½; do. 1st debent., 80; Memphis and Charleston, 38; Milwaukee, Lake Shore and Western pref., 44; do. 1st, 98; Michigan Central 5s, 101; Minneapolis and St. Louis, Iowa Ext. 1st, 115; New York, Chicago and St. Louis, 11½; do. pref., 27½; do. 1st, 96½; New York, Ontario and Western, 25½; New York, Lackawanna and Western, 87½; do. 1st, 113½; Norfolk and Western pref., 41½; do. gen'l mort., 101½; New York, West Shore and Buffalo 1st, 76½; New Orleans Pacific 1st, 88; Northern Pacific 1st, 104½; Nashville, Chattanooga and St. Louis 1st, 117; Ohio Central, 12; do. inc., 88½; do. 1st, 88½; Oregon Trans Continental, 84; do. 1st, 91; Oregon Short Line 6s, 95½; Oregon Railway and Nav., 137; do. 1st, 107; Ohio Southern, 12½; do. 1st, 82½; Oregon Imp. Co., 84; do. 1st, 90; Peoria, Decatur and Evansville, 22½; Panama S. F. 6s, 103; Quincy and Toledo 1st, 101; Richmond and Danville, 52½; do. 6s, 94½; do. debent., 65; Richmond, Danville and West Point, 22; Rochester and Pittsburgh, 12½; do. 1st, 105; do. inc., 43; Richmond and Alleghany, 11; do. 1st, 77½; Rome, Watertown and Ogdensburg 5s, 73; St. Paul, Minn. and Man., 157; do. 1st, 108½; do. Dakota Ext. 1st, 108½; St. Paul and Duluth, 37; do. pref., 94; St. Louis and San Francisco, Class A, 98½; do. B, 96½; do. C, 96½; do. gen'l mort., 99; St. Louis, Alton and Terre Haute div. bonds, 72; Southern Pacific of California 1st, 105½; South Pacific of Mo. 1st, 104; South Carolina inc., 60; do. 1st, 103½; St. Louis and Iron Mt. Arkansas Branch 1st, 109; do. 5s, 78½; Toledo, Delphos and Burlington inc., 11½; Texas and Pacific, 93½; do. inc. L. G., 66½; do. Rio Grande div. 1st, 81½; Toledo, Peoria and Western 1st, 109; Union Pacific col. trust, 6s, 103; Wabash, St. Louis and Pacific gen'l mort. 6s, 79; Arkansas 7s, L. R., P. B. & N. O., 49; do. L. R. & Ft. S., 51; do. M., O. & R. 50; North Carolina consol. 4s, 80; Tennessee 6s, old, 40½; do. compromise, 44½; Virginia 6s, def., 11½; American Cable, 65; Mutual Union Telegraph, 17½; do. 6s, 85; Consolidation Coal, 26; Colorado Coal and Iron, 32½; do. 6s, 81; New Central Coal, 12½; Homestake Mining, 15½; Ontario, 24; Standard, 6½.

**Boston.**—Atlantic and Pacific inc., 20½; Burlington and Missouri River in Neb. 6s, non-exempt, 102½; Boston, Revere Beach and Lynn, 115; Cheshire R. R. 6s, 109½; Chicago, Burlington and Quincy 4s, old, 86½; do. 4s, Denver Ext., 83½; do. 4s, S. W. div., 79½; do. 7s, 124; Connecticut and Passumpsic Rivers, 85; Chicago, Milwaukee and St. Paul, Dubuque div. 6s, 102; Flint and Pere Marquette, 25½; do. pref., 98; Green Bay and Minn., 8; Iowa Falls and Sioux City, 85; do. 7s, 120; Kansas City, St. Joseph and Council Bluffs 7s, 109½; Louisiana and Missouri River, 13½; do. pref., 23½; Little Rock and Fort Smith, 31; do. 7s, 91½; Massachusetts Central, 3½; Mexican Central, 20; do. 7s, 72½; do. inc. 20½; Marquette, Houghton and Ontonagon, 56½; New York and New England 6s, 105½; New Mexico and Southern Pacific 7s, 112½; Oregon Short Line 6s, 95½; Rutland pref., 17; Sonora 7s, 102½; Toledo, Cincinnati and St. Louis, 4; Wisconsin Central, 23½; do. pref., 30; do. 7s, 1st series, 80; do. 2d series, 50; Allouez Mining Co., 2; Atlantic, 10; Franklin, 12; Osceola, 29; Pewabic, 6.

**Philadelphia.**—Buffalo, New York and Philadelphia pref., 30½; Cincinnati City 6s, gold, 122; Elmira and Williamsport 5s, 101½; Germantown Passenger, 65; Huntingdon and Broad Top Mt. consol. 5s, 89; do. 1st 7s, 118; Lombard and South Streets Passenger, 27; Morris Canal pref., 175; Nesquehoning Valley, 52½; Northern Central 5s, series B, 95½; Northern Pacific scrip, 84; Philadelphia and Reading gen'l mort. 7s, 101½; do. scrip, 112; do. adj. scrip, 83½; do. consol. 5s, 2d series, 63; People's Passenger, 10½; Pennsylvania Canal 6s, 85; Philadelphia City 6s, 1903, 133½; do. 42, 1900, 112; do. 4s, 1912, 116½; do. 4s, 1885, 103½; Philadelphia, Wilmington and Baltimore 4s, 93½; Union and Titusville 7s, 96; West Jersey and Atlantic, 38; Western Pennsylvania

6s, A. & O., 108½; West Philadelphia Passenger, 146.

**Baltimore.**—Atlanta and Charlotte 1st, 106½; do. inc., 77½; Baltimore City 6s, 1886, 107; do. 6s, 1890, 113; do. 6s, 1900, 126; do. 5s, 1916, 122½; do. 5s, 1894, 113½; do. 4s, 1920, 110; Columbia and Greenville 1st, 101½; do. 2d, 83½; Canton Co. 6s, gold, 110; Consolidation Coal, 26; George's Creek Coal, 93; Maryland Defense 6s, 102½; North Carolina consol. 4s, 80; Ohio and Mississippi, Springfield div. 1st, 117½; Parkersburg Branch, 8½; Richmond and Alleghany, 12; Richmond and Danville, gold 6s, 94½; Union R. R. bonds endorsed, 117; Virginia and Tennessee 6s, 101½; Virginia Peellers, 35½; do. coupons, 49½; do. 10-40 coupons, 45; do. old, 53; Virginia consol. coupons, old, 53; Virginia Midland 2d mort., 107; do. 3d mort., 92½; do. 5th mort., 95; do. inc., 58; Wilmington, Columbia and Augusta, 85.

**COUPONS OF THE CENTRAL PACIFIC RAILROAD**  
Company (San Joaquin Valley Branch) and of the  
**LAND BONDS**, due April 2, 1883, will be paid at the  
Banking House of FISK & HATCH, No. 5 Nassau street,  
New York.

E. H. MILLER, Jr., Secretary.

**COUPONS OF THE FIRST MORTGAGE BONDS OF**  
the SOUTHERN PACIFIC RAILROAD COMPANY  
(of California), due April 2, 1883, will be paid at the  
office of the Company, Nos. 35 Wall and 25 Broad streets,  
New York.

J. L. WILLCUTT, Secretary.

**THE LAKE SHORE AND MICHIGAN SOUTHERN**  
RAILWAY COMPANY.

TREASURER'S OFFICE,

GRAND CENTRAL DEPOT,

NEW YORK, March 27, 1883.

THE BOARD OF DIRECTORS of this company have  
this day declared a QUARTERLY dividend of TWO PER  
CENT upon its capital stock, payable on TUESDAY, THE  
FIRST DAY OF MAY NEXT, at this office.

For the purpose of this dividend, and also for the annual  
meeting of the stockholders for the election of  
directors, etc., which is to be held on the 2d day of May  
next, the transfer books will be closed at 3 o'clock P. M.  
on Friday, the 30th inst., and will be reopened on the  
morning of Friday, the 4th day of May next.

F. W. VANDERWILT,

Acting Treasurer.

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to Draft, Securities, &c., bought and  
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BANKERS & BROKERS,

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Stocks and Bonds in the Boston market, the careful  
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in the United States and Canada, and of drafts drawn in  
the United States on Foreign Countries.



## COMMERCIAL DEPARTMENT.

## COMMERCIAL ITEMS.

THE annual report of the Collector of the Port of Philadelphia shows that the total value of shipments during the year 1882, amounted to \$34,529,459, against \$41,162,957 in 1881. During 1882 goods to the value of \$20,844,499 were shipped to England, \$2,409,572 to Belgium, \$1,437,413 to France, \$1,620,934 to Germany, \$1,169,053 to Ireland, \$1,173,203 to Italy, \$1,033,320 to Cuba, \$669,839 to Brazil, \$200,552 to East Indies, \$283,671 to Gibraltar, \$363,574 to West Indies, \$737,773 to Japan, \$284,285 to Austria, \$686,141 to Portugal, \$145,943 to Mexico, and \$562,386 to the Netherlands. Commodities valued at \$9,770,654 were exported in American vessels and \$24,758,805 in foreign vessels. The value of the imports in 1882 amounted to \$37,666,489, of which \$15,414,524 were brought in American and \$22,251,965 in foreign vessels. Duties amounting to \$12,994,813.70 were collected in 1882, which is an increase of \$2,549,411.80 over the total collections in 1881.

THE reports of the Bureau of Statistics at Washington show a very marked decrease in the exports of butter and cheese. In the months of January and February, 1882, the amount of cheese exported was more than 11,000,000 pounds, but in the months of January and February, 1883, the amount was less than 5,000,000 pounds. Comparing the exports for the ten months ending February 28, 1883, with those of the corresponding ten months of the previous year, it appears that the amount of butter exported fell from nearly 16,000,000 pounds to about 7,500,000 pounds, and the amount of cheese from 128,000,000 pounds to 89,000,000 pounds. Our exports of fresh beef for the four months which ended February 28, were 50 per cent greater than in the corresponding four months of the previous year, but there has been a decrease of the exports of salted beef, bacon, lard, pork and tallow. Hams show an increase.

AN investigation of the consumption and distribution of corn and wheat to March 1, 1883, has been completed by the Department of Agriculture. It makes the stock of corn on hand at that date about 500,000,000 bushels, or 36 per cent of last year's crop. Of this 380,000,000 bushels are in the States of the central basin north of Tennessee, and 166,000,000 bushels in the Southern States. Most of the remainder is in the Middle States. The proportion of wheat on hand March 1, is 28 per cent of the crop, or about 140,000,000 bushels. The proportion of the last five years at that date is nearly the same. In States of the central basin the total reported on hand is 104,000,000 bushels. The proportion remaining in the Southern States is 25 per cent, instead of 22, the average in previous years. In the Pacific States the percentage is 23 instead of the former average, 26 per cent.

DURING the month of January the exports of New Orleans amounted to \$12,637,215, and during February to \$9,541,104, or 22,178,319 in two

months—an increase of more than 60 per cent over 1882. This places New Orleans second to New York commercially. Indeed, the commerce of New Orleans, so far this year, is greater than that of any two other ports in the country, New York alone excepted. Of this cotton, as usual, constitutes about four-fifths of the total exports. Grain, however, shows a very flattering increase, the exports being 1,772,372 bushels, of the value of \$1,629,300—more than ten times as great as the grain trade of the corresponding months of 1882.

THE commercial circular of Howard Smith & Co., of Chicago, Ill., shows that the number of hogs packed in that market during the year ending March 1, 1883, was 4,223,000, a decrease of 878,000 compared with the preceding year. The falling off is attributed to the decreased supply of hogs in the country, and to the fact that higher prices and the restriction on exportation are making packers cautious. The average weight of hogs packed was 218 pounds, against 231 in 1881 and 234 in 1880. The number of cattle slaughtered during the past year was 774,578.

THE total values of the exports of domestic provisions during the month of February, 1883, were \$9,457,734; February, 1882, \$9,246,582. Two months ended February 28, 1883, \$20,106,218; two months ended February 28, 1882, \$22,446,961. Provisions and tallow, four months ended February 28, 1883, \$36,959,769; provisions and tallow, four months ended February 28, 1882, \$40,623,311. Dairy products, ten months ended February 28, 1883, \$11,327,139; dairy products, ten months ending February 28, 1882, \$16,942,928.

THE superintendent of the Cincinnati Merchants' Exchange, has made a statement of the pork packing statistics, showing the total number of hogs packed in that city from November 1 to March 1, to be 425,400; an increase over the previous year of 40,522. The yield of lard was 15,770,206 pounds, an increase of 1,000,600 pounds over the previous year. The aggregate cost of the hogs was \$1,214,254. The number of barrels of pork produced was 16,217.

THE total value of the exports of domestic breadstuffs in February, 1883, was \$15,773,009, and in February, 1882, \$11,175,193; for the two months ending February 28, 1883, \$31,608,586, against \$23,152,717 for the two months ending February 28, 1882; and for the eight months ended February 28, 1883, \$149,431,142, against \$135,296,632 for a like period of the previous year.

## New York Markets.

Quotations of Wednesday, March 28.

FLOUR—Dull; No. 2, \$2.40@3.50; superfine, \$3.50@3.80; shipping extras, \$3.75@4.20. Corn meal was dull and unchanged.

COTTON—Spots 1-16c. lower; sales 793 bales; middling uplands, 10 1-16c.; do. Gnlfs, 10 5-16c. Futures variable, closing irregular at 9.97c. for March, 10.04c. for April, 10.18c. for May, 10.31c. for June, 10.43c. for July, 10.54c. for August, 10.29c. for September, 10.04c. for October, 9.94c. for November, and 9.95c. for December; sales 121,000 bales; receipts at the ports, 11,717 bales.

PROVISIONS—Lard again opened firm and advanced; the close was steady. A very fair

speculation was noticed; sales on the spot 200 tcs. prime city, 11.20@11.25c.; 700 tcs. do. Western, 11.45@11.50c.; 110 tcs. off grade, 11.35c.; refined to the Continent, 11.50c.; South America, 11.80c.; for future delivery, sales 20,000 tcs., including April, 11.50@12.53c.; May, 11.54@11.59c.; June, 11.57@11.70c.; seller year 10.91c.; closing firm; April, 11.56c.; May, 11.61c.; June, 11.63@11.64c.; July, 11.65@11.67c.; August, 11.68c.; year, 10.95c. Pork unill and nominal; mess on the spot, \$19@19.25; 130 bbls. clear back, \$22@22.25. No sales for future delivery. Beet and beet hams quiet. Bacon and cut meats steady. Dressed hogs easy at 9 1/2@10c.; pigs, 10c. Butter steady; new creamery, firsts and extra, 24@35c.; State dairy, 16@30c.; Western factory, 10@18c.; do. creamery, 13@24c.; rolls, 10@18c. Cheese firm; State factory, 10@14 1/2c.; Ohio, 8@14c.; creamery, 5 1/2@8 1/2c. Eggs quiet; State, &c., 18c.; Western, 18c.; Southern, 17@1 1/2c.; duck, 28c.; goose, 45c.

GRAIN—Wheat was fairly active at an advance of 1/2@1 1/4c.; spot sales at \$1.07@1.25 for red, including No. 2 at \$1.21 1/2@1.22, delivered; No. 3 at \$1.16 1/2@1.18 1/2; 96c. @ \$1.21 1/2 for white, including No. 1 at \$1.11 and \$1.10 for No. 3 spring, delivered; of options, sales 4,072,000 bush. No. 2 red at \$1.18 1/2@1.19 for March, \$1.18 1/2@1.19 1/2 for April, \$1.21 1/2@1.21 1/2 for May, \$1.22 1/2@1.23 for June, and \$1.20@1.20 1/2 for July. Barley fairly active; 27,400 bush. ungraded Canada sold at 80c. @ \$1.04 1/2. Rye quiet at 72 1/2@76 1/2c. Oats higher; sales 950,000 bush. at 50 1/2@52 1/2c. for mixed and 52@56 1/2c. for white, including No. 2 at 51 1/2@51 1/2c. for mixed and 54c. white; also No. 2 mixed at 51 1/2c. for April, 51 1/2@51 1/2c. for May, and 51 1/2@52c. for June. Corn higher; spot sales 164,000 bush. at 66@67 1/2c. for new No. 2 mixed, 64@65 1/2c. for No. 3 do., 65@66 1/2c. for steamer mixed, 57@67c. for ungraded do. 69@75c. for Southern yellow; of options, sales 3,568,000 bush. No. 2 mixed at 65 1/2@66 1/2c. for March, 66@67c. for April, 66 1/2@67 1/2c. for May, 67 1/2@68 1/2c. for June, and 68 1/2@69 1/2c. for July. After 'Change wheat closed firmer; No. 2 red winter, cash, \$1.21 1/2 delivered; March, \$1.19 1/2; April, \$1.19 1/2; May, \$1.22 1/2; June, \$1.23 1/2; July, \$1.21 1/2. Corn stronger; No. 2 mixed, cash, 67 1/2c., delivered; March, 66 1/2c.; April, 69c.; May, 68c.; June, 68 1/2c. Oats steady; April, 52c.; May, 52c.

GROCERIES—Rio options lower; sales 14,500 bags No. 7 at 7.35c. for April, 7.55c. for May, 7.70@7.80c. for June, 7.85@7.95c. for July, 8@8.10c. for August, and 8.15@8.20c. for September; spot lots dull at 9 1/4@10c. for fair to good; 1,000 bags sold on p. t.; mild in fair demand and steady; sales 900 bags Laguayra, 500 Central American, and 550 Savanilla on p. t. Rice selling well at steady prices. Molasses quiet for foreign, but somewhat more active for domestic, with prices steady. Raw sugar quiet, but steady, at 7@7 3-16c. for fair to good refining; sales 1,320 hhds. and 1,500 bags at 7 1/2c. for centrifugal, and 6 1/2c. for muscovado; refined easy; hards, 8 11-16@9 1/4c.; standard "A," 8 1/4c.

SUNDRIES.—Rums were firm, and not freely offered at \$1.65@1.72 1/2 for common to good strained. Spirits turpentine firmer at 49@49 1/2c. in yard; jobbing lots, 50 1/2c.; the Wilmington advices were better. Refined petroleum better, in sympathy with the higher prices at the Creek; 110 deg. test quoted here 8 1/2c.; 70 deg. test, 8 1/2c.; home trade, 9 1/2c. Crude certificates better and averaged 96c. for the day; sales, 2,500,000 bbls. Tallow quiet but steady; 20,000 lbs. prime, 8 1/4@8 3/4c. Stearine quiet but steady; prime, 11 1/2c.; oleomargarine, 9 1/2@10 1/2c. Grease steady; 7,000 lbs. light medium sold at 7 1/2c. Hops were stronger at 85c. @ \$1 for State 1882, as to quality and delivery; yearlings, 75@90c.; Eastern, 85@96c.; the London and German advices were better. Ocean freights quiet, and rates more or less irregular; grain to Liverpool by steam 2 1/4d. flour, 1s. 3d. 7/8 bbl. and 10s. 7/8 ton; bacon, 12s. 6d. @15s.; cheese, 17s. 6d.; cotton, 1/2d.; grain to London by steam, 3 1/2d.; do. to Glasgow by steam, 2 1/4d. Crude petroleum and naphtha to Bordeaux, 3s. 3d.; refined do. to Hamburg, 3s.; do. from Philadelphia to

Hamburg, 3s.; grain thence to Oporto, 13c.  
Foreign fruits sold by auction to the extend of  
5,000 cases Valencia oranges, \$5@7.25.

## Chicago Grain Markets.

Quotations of Wednesday, March 28,

	0:30 A.M.—Opening.—		1 P.M.—Closing.—	
	Mar.	May.	Mar.	May.
Wheat...	1.09 1/4	56 1/4	1.05 1/4	1.10 1/4
Corn...	5 1/4	56 1/4	5 1/4	57 1/4
Oats...	4 1/4	41 1/4	39 1/4	43 1/4
Pork...	18.35	18.35	18.35	18.35
Lard...	11.40	11.40	11.42 1/2	11.42 1/2
S. Ribs...	9.90	9.90	9.95	9.95

## Commerce of New York.

The foreign imports at New York for the  
month of February were:—

	1881.	1882.	1883.
Ent. for cons.....	\$17,812,805	\$22,813,559	\$19,696,245
Do. for warehousing	6,380,790	6,540,098	8,383,944
Free goods.....	9,363,596	10,815,027	10,357,176
Specie and bullion..	591,072	225,462	508,660

Total ent. at port....	\$34,157,263	\$40,414,146	\$38,946,025
Withdrawn from warehouse.....	6,539,640	7,575,267	7,533,146

The foreign imports at New York for two  
months from January 1, were:—

	1881.	1882.	1883.
Ent. for cons.....	\$33,174,618	\$45,058,944	\$39,201,542
Do. warehouse.....	12,130,280	13,799,659	17,158,378
Free goods.....	19,623,225	21,091,170	21,722,665
Sp. and bullion...	5,314,499	600,046	1,114,183

Total en. at port...	\$70,242,622	\$80,549,819	\$79,196,168
Withdrawn from warehouse.....	14,391,864	15,251,652	15,770,949

The foreign imports at New York for eight  
months of the fiscal year were:—

	1881.	1882.	1883.
6 months ending January 1.....	\$280,770,515	\$252,275,460	\$248,987,459
January.....	36,085,359	40,135,673	40,250,143
February.....	34,157,263	40,414,146	38,946,025

Total 8 months....	\$351,013,137	\$332,825,279	\$328,183,627
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The duties received at New York for the  
eight months ending with February were:—

	1880-'81.	1881-'82.	1882-'83.
In July.....	\$13,360,394 37	\$12,079,573 95	\$13,730,752 87
In August....	14,492,361 87	15,205,469 58	16,483,260 02
In September	12,856,636 10	14,104,647 51	14,690,362 74
In October...	10,574,333 53	13,011,426 27	13,095,876 47
In November	9,079,082 36	9,711,039 46	9,938,679 71
In December	9,230,734 57	10,972,321 38	10,380,192 56
In January...	10,572,559 15	13,337,515 96	12,574,837 84
In February..	11,217,766 87	13,585,053 25	12,191,602 66

otal 8 mos..	\$91,383,868 82	\$102,056,047 36	\$103,085,565 47
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The exports from New York to foreign ports  
for the month of February were:—

	1881.	1882.	1883.
Dom. produce.....	\$27,064,988	\$24,402,719	\$27,296,220
For. free goods....	682,033	803,049	736,237
Do. dutiable.....	389,282	529,289	395,913
Specie and bullion..	1,184,443	8,247,861	1,062,859

Total exports.....	\$29,320,746	\$33,982,918	\$29,491,229
Do. exclusive of specie.....	28,136,303	25,735,057	28,428,370

The exports from New York to foreign ports,  
for two months from January 1, were:—

	1881.	1882.	1883.
Dom. produce.....	\$55,591,308	\$51,367,499	\$55,080,872
For free goods....	1,990,800	1,227,631	1,345,076
Do. dutiable....	819,114	988,661	893,371
Sp. and bullion...	2,218,957	9,518,302	2,453,559

Total exports.....	\$60,620,179	\$63,102,093	\$59,772,878
Do. exclusive of specie.....	\$58,401,222	\$53,583,791	\$57,319,319

The exports (exclusive of specie) from New  
York to foreign ports for eight months ending  
with February were:—

	1881.	1882.	1883.
Six months ending January 1.....	\$220,839,850	\$187,136,859	\$188,770,362
January.....	30,264,919	27,848,734	28,890,949
February.....	28,136,303	25,735,057	28,428,370

Total produce.....	\$279,240,572	\$240,720,650	\$246,030,681
Add specie.....	6,868,358	15,789,351	14,555,232

Total exports.....	\$286,108,930	\$256,510,001	\$260,585,913
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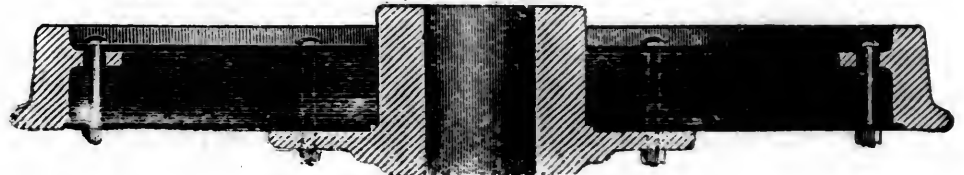
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## MISCELLANEOUS.

### Railroad Reminiscence.

HOW THE BELL ROPE WAS INTRODUCED IN RAILWAY SERVICE AND THE CONDUCTOR BECAME BOSS OF THE TRAIN.

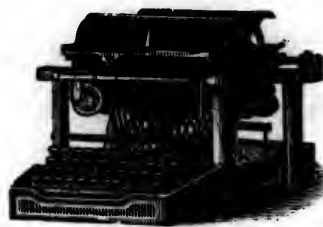
WHILE talking with a number of train men at one of the railroad depots yesterday, a city reporter found an interested audience in relating the following reminiscence of primitive railroading, which he had acquired in an interview some time ago with the inventor of the present system of signaling between the engineer and train officials:

In the early days of the railroad in this country the locomotive engineer was the master of the train. He ran it according to his judgment, and the conductor had very little voice in the matter. Collecting fares, superintending the loading and unloading of freight, and shouting "all aboard!" were all that the conductor was expected to do. The Erie Railway in the North was then the New York & Erie Railroad. One of the pioneer conductors of this line was Captain Ayres. He ran the only train then called for between the terminal points. It was made up of freight and passenger cars. The idea of the engineer, without any knowledge of what was going on back of the locomotive, having his way as to how the train was to be run, did not strike the captain as being according to the propriety of things. He frequently encountered a fractious passenger who insisted on riding without paying his fare. As there was no way of signaling to the engineer, and the passenger could not be thrown from the train while it was in motion, the conductor, in such cases had no choice but to let him ride until a regular stop was made. Captain Ayres finally determined to institute a new system in the running of trains. He procured a stout twine, sufficiently long to reach from the locomotive to the rear car. To the end of this string, next the engineer, he fastened a stick of wood. He ran this cord back over the cars to the last one.

He informed the engineer, who was a German named Abe Hammil, that if he desired to have the train stopped he would pull the string and raise the stick, and would expect the signal to be obeyed. Hammil looked upon the innovation as a direct blow at his authority, and when the train left the station he cut the stick loose, and told Captain Ayres that he proposed to run the train himself, without interference from any conductor. The next day the captain rigged up his string and stick of wood again. "Abe," said he, "this thing's got to be settled one way or the other to-day. If that stick of wood is not on the end of this cord when we get to Turner's you've got to lick me or I'll lick you." The stick was not on the string when the train reached Turner's. The captain pulled off his coat and told Hammil to get off his engine. Hammil declined to get off. Captain Ayres climbed to the engineer's place. Hammil started to jump off on the opposite side. The conductor hit him under the ear and saved him the trouble of jumping. That settled forever the question of authority on railroad trains.

Hammil abdicated as autocrat of the pioneer Erie train, and the twine and stick of wood, manipulated by the conductor, controlled its management. That was the origin of the bell rope, now one of the most important attachments of railroad trains. The idea was quickly adopted by the few roads then in operation, and the bell or gong in time took the place of the stick of wood to signal the engineer. Captain Ayres continued a conductor on this road under its different managers until he was superannuated and retired on a pension. — *Express Gazette*.

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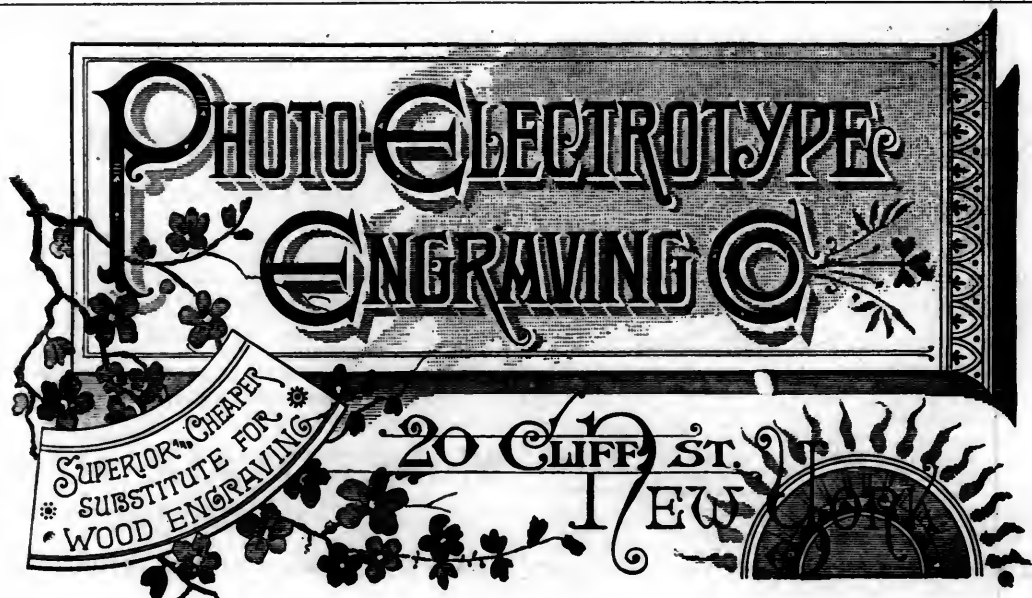
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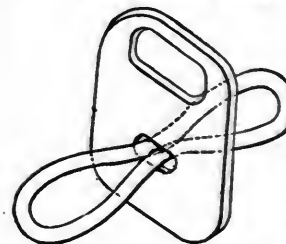
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## Color Blindness.

[From the Boston Journal.]

At the hearing before the Railroad Committee on March 6, upon the question of change in the law requiring examination of certain employés with respect to visual power, etc., Surgeon Head, U. S. Army, spoke substantially as follows:

I ask leave to appear as a citizen of Massachusetts, and as an officer of the United States, obliged by orders to have a practical acquaintance with examinations for color blindness, and believing it my duty to place at the service of the community whatever special knowledge I may have acquired. Of other defects of vision I shall say nothing. I do not claim to be an expert oculist.

Question No. 2 of those propounded in the circular of the petitioners' counsel reads as follows: "If an employé is able to distinguish all forms and colors used in your railroad signals, do you not consider him fit for railway train service?"

To this question all the advocates of proper examinations will reply, "Yes, undoubtedly." We all agree that "we do not care"—*nor do we ever seek to know*—"whether he can match unerringly all the neutral shades to be found in the budget of a color-blind enthusiast,"\* or anywhere else.

The real question is, How shall the ability to distinguish the signal colors be proved?

Many railroad men say that an examination with the signal colors alone is the best way—the only just and trustworthy way. Many men who have devoted years to the practical solution of this question say that this way has been amply tried and found unreliable, impractical and impossible. The majority of these investigators recommend as quicker and surer another method. About this method a great deal of nonsense has been uttered, calculated to throw dust in the eyes of the employés, the Legislature and the public. To judge the "worsted test" by what is often said and oftener hinted about it, one would suppose that it required the examined to be familiar with, or at least to be able to distinguish from each other, many delicate shades of color. You have seen the method—what is the fact? In less than a minute the examined (in this case your own Chairman) proves his freedom from color-blindness by showing that he can distinguish *one* color—*only one*—of which he need not even know the name. If he can see *green*, we know that he can see *red*. Hereafter, if any one brings up the stale witticism that we require the engineer to have the qualifications of a haberdasher, the answer should be, "My good man, you either do not know what you are talking about, or you are willfully falsifying." No person who can distinguish the railroad signal colors runs any risk of failing with this test in competent hands.

It is not uncommon, in connection with this subject, to hear talk of "scientific methods" and "practical methods," as if the two were of opposite characters. But a scientific method means simply a method based on knowledge. If "practical" means that which can be effectively used by every one, without

knowledge or training, then the locomotive engine is one of the most impractical inventions ever seen. The most practical method in anything is that which accomplishes its object most expeditiously and most surely. Suppose the case of a savage, ignorant of any better way of slaying his game or his enemy than the club or the lance. One comes to him with a scientific invention—the rifle—which he assures him will answer his purpose better than his former rude weapons, and explains its use. "But," says our wild friend, "why go to work in this roundabout way, mixing chemicals and putting them into this complicated machine? That is all scientific. Give me the practical way! I know that lances will kill." In justice to the primitive races, I must say that among the many savages I have personally known, I never met one who was such an idiot as to reason thus. The actual savage is ready enough to adopt the inventions of science—as our army knows to its cost. But if your rifle be placed in unskilled hands, it is as likely to do harm as good; and so it is with the really best test for color-blindness.

We have been threatened with ridicule; and treated with a quotation from Horace, to the effect that ridicule often avails where sober reasoning is ineffectual. But Horace was speaking of things in themselves ridiculous. Let me remind you of a saying older than Horace, which I have not learning enough to quote in the original, but the translation of which reads: "The laughter of fools is like the crackling of thorns under a pot"—meaning, I suppose, that it is noisy, short-lived, useless and harmless.

You are asked to recommend that the competent persons intrusted with these examinations be forced by law to discard "the methods of a Holmgren, a Donders, a Schilling and a Pfüger,"† and to confine themselves to a method which they believe to have been found upon trial practically worthless.

Such action would be precisely like committing a hospital to the charge of skilled physicians, forbidding them to follow the treatment of a Liston, a Ferguson, a Bigelow or a Warren, and restricting them to the remedies of Mrs. Lydia Pinkham.

\* President Watrou's letter.

† Under the present law the Examiner may confine himself to the signal colors if he choose.

‡ Mr. Carrigan to the committee.

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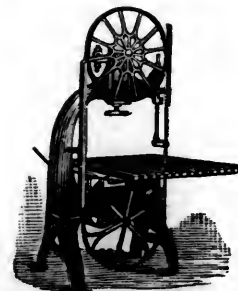
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## TRAMWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editor. All communications should be accompanied by the name and address of the writer. The English nomenclature of "Tramway" is adopted in this department as being of greater convenience and more specific in its meaning than "street railway," though in allusion to individual organizations we shall preserve their corporate titles. It is our hope to nationalize the term Tramway which is now generally used in every English speaking territory with the exception of the United States.]

### A NEW FIELD FOR TRAMWAYS.

THE hours of the day during which tramways may be said to conduct their business, are between five o'clock A. M. and eleven o'clock P. M. The remaining six hours are virtually periods of idleness to the majority of tramways and in the smaller towns it is customary to discontinue the running of tram-cars altogether after midnight or some earlier hour of the evening. In larger cities a few cars are kept running all night to accommodate those travelers who find occasion to travel at abnormally late hours, but it is doubtful if the receipts of tramway companies from all-night cars more than pay their necessary running expenses, and for the purposes of argument it may be admitted that the profits of tramways are all made between five in the morning and eleven at night. Practically the tramways are idle one quarter of the time.

It strikes us that this time might be economized and turned to the profit of the tramways, without any interference with the running of the few night cars that the accommodation of the public demands. Not only may tramways themselves experience an appreciable benefit by this economy of time which we suggest, but the people dwelling along their lines. Possibly we are not the first to make the suggestion and it is also within the bounds of possibility that it is for some reason not known to us impracticable, but we offer it nevertheless and commend it to the attention of those interested in the management of tramways either officially or financially.

It is, in brief, to employ the hours of the night in which passenger travel is either very light or entirely suspended upon tramways, in transporting baggage and light freight upon their tracks and delivering it at various points along the lines. At present this freight and baggage transportation is accomplished by drays and heavy wagons which are necessarily slow in movement and at the same time create such noise and clatter that night is made hideous and the slumbers of the people living on the streets are woefully curtailed thereby. The employment

of light though strong platform or freight cars upon tramways to carry on this transportation would obviate both of these difficulties, and remove all ground of complaint. The cars could be run noiselessly and at a good rate of speed, there being no need of the tinkling bells generally associated with tram-cars, while the streets are free from the numerous obstructions met in the daytime. In New York City especially we should imagine such a plan both practicable and beneficial. The numerous wholesale houses which are constantly engaged in shipping and expressing goods to points far and near, might load their wares upon cars of their own, and despatch them to some central point of delivery. These private cars could, while loading, stand upon a side track, the use of which would be impossible during the day, and after the goods were duly loaded, the cars could wait until a train composed of other tram-cars took it up and conveyed it upon the main lines to its point of destination where it could be reclaimed by its owners. Possibly it would not be feasible to run each car independently, but the adoption of a system of tram trains presents, to us at least, no difficulties of an insurmountable nature. Side tracks could be constructed at points near the shipping and express headquarters where the cars could be unloaded, while during the day the cars could be housed either upon the premises of the owners or at the tramway stables from which they could be run at night and dropped at the doors of the business houses to which they belong.

As a matter of course such transportation of freight would be impossible during the daytime, and the system suggested therefore, could not be universally adopted, for much freight is of necessity transported during business hours, but within limits we should imagine the employment of tramways for the purposes and in the manner suggested quite feasible and useful. It must be remembered that the additional tracks necessary to conduct this system of transportation would only be in use during those hours when other traffic is entirely suspended, and with this fact in view it would seem possible to lay tracks direct to the wharves of steamers or to freight depots, and by a system of switches run the cars to these points where the loading or unloading might be accomplished with the least trouble and without intermediate handling. The tramway companies could if they deemed it better own the cars and charge a fixed rate for the transportation of freight and a rental for the use of the side tracks, but in either event the adoption of such a scheme would result in a profit to tramways during hours that their roads are now idle, and at the same time do away with much of the

noise and confusion at present attendant upon the removal of freight in the night.

As we said before, the plan may be open to serious objections to an extent that might render it impracticable but we offer it for what it is worth and commend it to the attention of those immediately interested. The suggestion may at any rate serve to prove that we are sincere in our endeavors to consider the interest of tramways, and are ready to lay any project before the readers of this department of the AMERICAN RAILROAD JOURNAL that may either directly or remotely be of benefit to tramway management.

### The Central Street Railway of Baltimore.

THE immediate success of the Central or Crosstown railway, of Baltimore, Md., as it is more familiarly known, is a subject of much gratification to the people residing along its route as well as to the large number of persons who daily travel over it. The need of such a line directly connecting the Eastern and Northwestern sections of the city was a long acknowledged want, and since cars began running several weeks ago the patronage has been much larger than was expected. The railway as completed was turned over to the directors a few days since by Mr. W. D. Crane, the contractor. Mr. Crane, in the construction of the road, profited by his wide experience in such matters, so that the railway is fitted with all the modern improvements. The bed of the road has been laid with remarkable evenness and the running of the cars is accompanied by few jolts or unpleasant jarrings, as is the case with many of our street railways. Last summer a strike occurred among the workmen, but the prompt action of Mr. Crane obviated any delay and all further trouble. The road is a model of construction, and when Mr. Crane turned it over to the directors, they congratulated him profusely on its excellence. It has been dubbed by several "The Nickel-plate Railway, of Baltimore."

The road consists of a double track, five miles long, beginning at Broadway and Lancaster streets, and continuing up Caroline to Preston, to Eutaw, to Biddle, to Argyle avenue, to Dolphin, to Myrtle avenue, to Lanvale, to Fulton avenue.

The stables of the company, situated at Preston and Constitution streets, are the most commodious in the city, covering over 30,000 square feet, while the surrounding grounds are over seven acres in extent. In the construction and arrangement of the buildings and grounds Mr. Crane has shown a great regard for the health of the horses, which are allowed to travel only one half the route, when they are turned into a pasture where there is plenty of food. This plan is praiseworthy and humane. The cars of the company are very handsome; each beautifully decorated with over forty oil panel paintings, cushioned in maroon plush and elegantly finished in every way; they have been very much admired by all who have traveled in them. In

fact the road and all its accoutrements are objects of praise on every hand.

### Tramways in the Courts.

THE dispute between the Chestnut and Walnut and Gray's Ferry Passenger Railway Companies of Philadelphia as to the right of the latter to lay a track along Twenty-second street from Walnut to Chestnut, was recently decided in favor of the Gray's Ferry Company by the Supreme Court, in an opinion by Justice Paxson. The injunction therefore which had been ordered by the Court of Common Pleas No. 2 was dissolved, and the bill of the Chestnut and Walnut Street Company was dismissed at its cost. In his opinion Justice Paxson holds that the act of incorporation under which the Chestnut and Walnut Streets Company claimed the exclusive right to the use of the street was nothing more than a license or promise by the State to the company, which the former could revoke or annul at will.

"In the present age of corporate greed," says Justice Paxson, "it would be dangerous to hold the contrary doctrine. Were we to do so, corporations, instead of being the creatures of the State, might become its masters. The object of the act was to protect from competition, nothing more. It is difficult to see how the laying down of a track and its use for a single square by cars running in an opposite direction can produce competition. Even if we are wrong in this the principle is well settled that a franchise is property, and like any other species of property may be taken by the Commonwealth, or one to whom the Commonwealth has delegated its powers of eminent domain, upon making compensation. Therefore the most that can be claimed by the Chestnut and Walnut Streets Company is compensation for the use of this one square." The Judge said that the Chestnut and Walnut Streets Line was in no sense the guardian of the rights of the city or of the people, and it could not interfere with the use of the streets beyond the privileges conferred by its charter.

### The New Cars upon the Fourth Avenue Line.

THE first appearance of the new cars on the Fourth Avenue Railroad of this city took place on Sunday last. They had been promised in the beginning of the winter, when the fare was reduced from six to five cents. One of the attachés of the company stated that the reduction in fare had considerably increased the number of the patrons of the line, especially on week days, and in consequence it had become necessary to put on more cars. He added that the travel below Eighth street (where a proportion of the cars stop) was much greater than formerly and now the headway had been reduced from three and a half minutes to two minutes all the way down town. Many complaints had been made that three and a half minutes was too long a time to wait for a car, especially on a cold day.

The new cars (twenty in number) are the handsomest yet seen in this city. The finishing is done in polished maple, oak and white

ash. The panelling above the windows looks very pretty with a simple but tasteful design painted in harmonious colors. The brackets supporting the hand rods and the other interior metal work are of bronze. The seats and backings are of cane, stuffed as in the new "L" road cars. Two mirrors, one at each end of the car, afford the young ladies an opportunity of arranging their bangs and the young gentlemen their collars and ties. The lighting is also improved, for, in addition to the two end lights, is an extra powerful lamp in the center of the ceiling. In the new cars, however, there seem to be no means for heating. In the beginning of the winter one of the officials was asked why the company did not follow the example of the Second avenue line and warm their cars. He answered that they had not thought of that. Their patrons express the hope that they may think of it by next winter.

### TRAMWAY NOTES.

MR. H. F. MCGREGOR, secretary of the Galveston (Texas) Street Railway, has consummated the purchase of the controlling interest of John Shern in the Houston City Street Railway Company for a Galveston syndicate. Mr. Shern, president of the Houston Line, and all the directors have resigned and the new managers will take charge at once. A report is current that Col. Sinclair, manager of the Galveston Street Railway, will become the superintendent of the Houston line, and that he will purchase or lease the Fair Grounds and erect on it a grand pavilion equal to the one he built in Galveston. If the report proves true, there will be a property boom all along the Houston City Street Railway lines. Col. Sinclair lifted the Galveston lines from their financial ruts, made them pay and increased property values everywhere in their neighborhood.

MENTION was recently made in these columns of the experimental trip of cars propelled by electricity on a London tramway. The car ran well at the rate of six miles an hour and the trial was pronounced entirely satisfactory by the scientific and commercial men who witnessed the trip. General Hutchison, who had been closely observing the working of the car during the morning, and was satisfied with what he had seen, expressed himself confident that the Board of Trade will grant the necessary licence, and, when this official sanction is obtained, the first electrical cars will run on the Acton Road. Sir Daniel Cooper, chairman of the Electrical Storage Company (Limited), after the experiments presided at a luncheon at the Star and Garter Hotel, Kew Bridge, and interesting speeches by men of eminence in the scientific world were delivered.

THE impression prevails in New Orleans that the projectors of the elevated railroad in that city will, if they fail to get the tramways to use their tracks, use them for an elevated street railway. It is stated that owing to the crowded condition of the streets near the levee that an elevated railway would do an immense business along the river front, as quick transit from the lower to the upper limits of the city is some-

thing that is greatly needed, especially during the busy season for the reason that cars running near the up town cotton presses are often compelled to creep along, owing to the streets being crowded with drays and vehicles of all descriptions.

AN act to incorporate the Wilmington (Del.) and Brandywine Passenger Railway Company will be introduced in the General Assembly at Dover in a few days, empowering the corporators to construct a tramway from the P., W. & B. railroad station at Front and French streets via French, Sixteenth and Market streets to the Riverview cemetery. The persons asking for the passage of the act, it is understood, are the incorporators of the Wilmington Pioneer Coach Company.

A CORPORATION known as the Brooklyn Cable Railroad Company has filed a map and profile in the office of the Register of Kings county, N. Y. The president is Edward A. Phelps, Jr., and the engineer Samuel H. McElroy. According to the map and profile the company's object is to operate a line of traction cars on Montague street, Brooklyn, between City Hall square and Wall street ferry. At present cabs are used.

MR. JOHN MCCARTHY has been elected president of the Citizens' Passenger Railway (Tenth and Eleventh streets), of Philadelphia, succeeding the late George Williams. Mr. McCarthy has been for the past twenty-five years connected with that company as stockholder and director, and is well known in passenger railway and general business circles.

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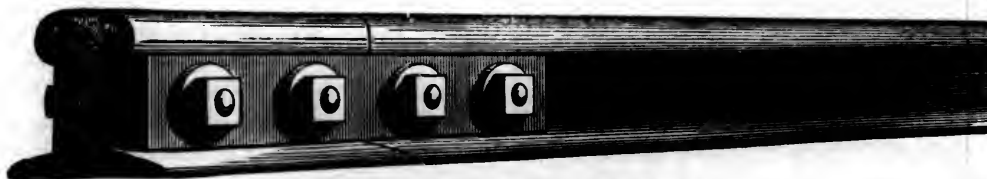
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## NEW INVENTIONS.

## TO INVENTORS AND PATENTEES.

THIS department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Tramways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full descriptions of those most useful and important are published *free of charge*.

Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

## A WORD OR TWO OF EXPLANATION.

[We reprint the following from our issue of Feb. 24, and shall keep it standing at the head of this column until the purposes of the Department of New Inventions are fully understood by all our readers].

THE department of New Inventions is conducted in the interests of our readers and of inventors of devices applicable to Railroads, Steam Navigation, Mining, Street Railways, etc. We believe that full descriptions of new and patented appliances of this nature will prove interesting to our readers, and cannot fail to bring the inventor's device into the prominent notice of that class of persons among whom he looks for the heaviest sales and royalties. No charge is made for the insertion of such description in this department, but there is a *sine qua non* requisite in all inventions before we will devote space toward their publication. They must be *new* and *valuable*. It is not our intention to offer a free advertisement to any person, and the inventor whose invention is given full description in the AMERICAN RAILROAD JOURNAL must have produced something of importance and value.

We have not established this department in a spirit of philanthropy, and do not lay claim to any special generosity in publishing descriptions of new inventions free of charge. Our aim is to increase the number of both our readers and advertisers. The continued publication of valuable patents will, we think, attract readers who are interested in the problems connected with railroad and steamboat management, mining, the management of street railways, and the like, while the value of an advertisement in the columns of the JOURNAL will ultimately be apparent to inventors of appliances tending to solve these problems. It is purely a business transaction, and we do not wish inventors to feel themselves under any obligation to us through our description of

their patents. If they choose to advertise or order a number of copies of the AMERICAN RAILROAD JOURNAL containing such descriptions, we would be glad to have them do so, and may possibly ask them for an advertisement or an order, in the form of a fair business proposition, but they are under no obligation to accept our advances. In other words, there is *nothing* obligatory on their part, but at the same time there is nothing obligatory on our part either. We reserve the liberty to ignore any invention whose description is sent us without assigning any reason for such action, and if our opinion and that of the inventor as to the utility of the invention chance to differ, we propose to be guided solely by the former.

The cause of these few words of explanation lies in the fact that many inventors seem to recognize an obligation on our part to describe in full their inventions, while they in return do not feel compelled to go to any expense in order to acknowledge such publication. It would be manifestly impossible for us to publish full descriptions of all inventions of this class, when the weekly list of new patents of the sort numbers fifty or more. Every new invention of the character mentioned above is noticed in our weekly list of patents, and we shall further endeavor to give a brief description of all, but in selecting those for extended notice, we are guided simply by their importance and general utility. Our advertising pages are open at reasonable terms to all inventors and holders of patents, but this department is entirely our own, and we must be pardoned if we choose to conduct it in the manner we deem best. If inventors desire a medium through which valuable inventions of a certain class are brought into public notice free of charge, they will aid us in this direction by subscribing to and advertising in the RAILROAD JOURNAL, but they should do so solely in a practical business way, not influenced by any feelings of obligation, while none exists upon their part so to do, nor upon our part to publish any description that is forwarded us.

## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Tramways, Machinery, Etc.

BEARING DATE OF MARCH 20, 1883.

- 274,101. Electric Motor: John B. Atwater, Chicago, Ill.
- 274,102. Boiler-Feed Apparatus for Engines: Jared A. Ayres, Mystic River, Conn., assignor to the Pneumatic Engine Company, same place.
- 274,106. Car-Coupling: Gurden L. Chamberlin, Marietta, Ohio.
- 274,107. Car-Door: Charles W. Collier, Hannibal, Mo.
- 274,133. Safety-Valve: Albert C. Meady, East Somerville, assignor to the Crosby Steam Gage and Valve Company, Boston, Mass.
- 274,144. Car-Brake: Albert C. Roland and Adrian Harper, Albuquerque, N. Mex.

- 274,152. Car-Axle Lubricator: Francis M. Taneyhill, Barnesville, Ohio.
- 274,154. Steam-Pump: Eli Thayer, Worcester, Mass.
- 274,155. Hydraulic Valve: Eli Thayer, Worcester, Mass.
- 274,159. Car-Axle Box: Eleanor Whiting, Brooklyn, N. Y., assignor of one-half to Josephine Mary Smith, same place.
- 274,160. Car-Truck: Eleanor Whiting and Joseph Nottingham Smith, Brooklyn, N. Y.; said Smith assignor to Josephine Mary Smith, same place.
- 274,165. Metal Packing for Piston-Rods: Samuel Armstrong, Newark, N. J.
- 274,180. Car-Coupling: William De Cew, Buffalo, N. Y.
- 274,188. Nut-Lock: Samuel D. Groves, Sacramento, Ky.
- 274,192. Device for Loading Cattle on Railway-Cars: Hiram C. Hawley, Valley Falls, and James I. Davis, Topeka, Kans.
- 274,197. Car-Step: Thomas B. Howe, Scranton, Pa.
- 274,200. Railway Safety-Switch: Chas. T. Johns, Cleveland, Ohio, assignor of one-half to Charles D. Everett, same place.
- 274,218. Car-Wheel: William H. Paige, Springfield, Mass.
- 274,222. Check-Valve: Julius P. Pfau, Lansingburg, N. Y.
- 274,240. Stock-Car: Samuel C. Wiser, Chicago, Ill.
- 274,301. Steam-Boiler: Patrick Fitzgibbons, Oswego, N. Y.
- 274,309. Combined Railroad Tie and Chair: William H. Gibbs and George W. Snook, Hopewell, N. J.
- 274,319. Street-Car Fare-Box: John R. Hare, Baltimore, Md.
- 274,321. Steam Fire-Engine: Win. H. Havens, Paterson, N. J.
- 274,355. Station-Indicator: Ben McCrary, Hot Springs, Ark.
- 274,364. Valve: Henry Oldendorph, Belleville, Ill.
- 274,377. Railway-Chair: Joseph H. Ream, Canton, Ohio.
- 274,388. Automatic Car-Brake: Charles V. Rote, Lancaster, Pa., assignor of seven-eighths to John W. Holman, and Robert M. Agnew, same place, Henry Hice, Beaver, Pa., and Michael D. Harter, Mansfield, Ohio.
- 274,399. Car-Starter: Theodor Soetbeer, New York.
- 274,422. Car-Coupling: George W. Vunk, Brockport, N. Y., assignor of one-half to Byron E. Huntly, same place.
- 274,436. Variable Eccentric for Steam-Engines: Milan C. Bullock, Chicago, Ill.
- 274,437. Compound Steam-Engine: Milan C. Bullock, Chicago, Ill.
- 274,439. Dumping-Car and Apparatus for Transporting the same: John J. Clarke, Patapa, Peru, assignor of one-half to A. W. Colwell, New York.

## Car-Coupling.

NATHANIEL HALSTED, OF SCRANTON, PA., PATENTEE.

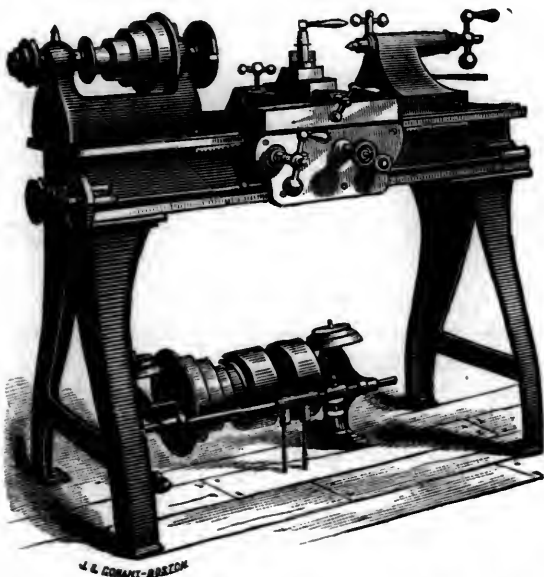
THIS invention relates to certain new improvements in devices for coupling cars by the use of a hinged lever having its handle extending out toward the side of the car; and the object of the present invention is to produce such a device that will be at once simple in its construction, easily and cheaply manufactured, effective in its operation, and readily applied to the bumpers of any car for raising the coupling-link to the desired height to enter the opposing draw-head with ease and perfect safety to the brakeman or train-hand, thereby preventing the risk of life and limb, as the train hand stands outside of the rail entirely away from the bumpers. It will also enable the ready adjustment of the coupling-link by the lever to suit any difference of elevation there may be in the opposing draw-heads, while at the same time the lever will, when the handle is released of its own weight, drop under, and thus automatically bring the handle up against the bumper out of the way. To the bumper of a car is attached a bifurcated plate having its bifurcations terminating in bearings for the journals of a lever. These have each



an enlarged extension, so as to prevent the sides of the lever from coming in contact with the sides of the bearings and hold the lever at the point of connection midway between the bearings. The journal-bearing is of ordinary shape, while the other is elongated in a horizontal direction in order to allow a lateral play to the journal therein, thereby giving the lever a longitudinal action in order to adjust the coupling-link to the opposing draw-head when operated upon by its handle which is curved in an outward direction toward the side of the car, so that the coupling of the cars may be effectually performed without the necessity of the brakeman or train-hand entering between the cars, thereby preventing the risk of his life and limb. The blade of the hinged or pivotal lever is of a weight greater than the handle, and is curved in order to come under and adjust the coupling-link when the handle is operated. After the coupling has been effected and the handle released, the weighted lever, having one of its journals working free in the elongated bearing of the bifurcated plate, falls of its own weight under the draw-head and automatically brings the handle up against the bumper out of the way, thereby rendering the lever self-adjusting and always ready for use.

For use on cars having the bumpers longer than those ordinarily employed, the lever may be bent up in such a manner as to come under the draw-head without departing from the general nature of the invention.

#### Birkenhead's New Patent Single Head Lathe.



The lathe is furnished with a 5-foot bed counter-shaft, 650 lbs., 14 inch swing, 7 inches over carriage, 2-inch hollow spindle, 2-inch taper bearings at face plate, so that a close fitting spindle is always obtainable. There are three patterns of cones adapted to light or heavy work. The cut shows a No. 1 cone for light work, 6 3/4 inch diameter, 11-16 drop, 1 1/2 inch belt, 4 speeds. A No. 2 cone is 8 inch diameter, 3-4 inch drop, 1 1/2 inch belt, 4 speeds. A No. 3 cone is 8 inch diameter, 1 inch drop, 2 1/2 inch belt, 3 speeds carriage is weighed by springs and rolls; by turning a screw more or less weight can be obtained. Strain on feed belt is adjustable by raising or lowering the lower cone which is

hung on an arm which clasps the feed-rod box in the form of a split sleeve, which also forms a bonnet or cover to protect the teeth from dirt or chips. The feed belt may run very slack as it takes its motion from spindle (instead of a slow motioned stud as is usual), which increase of speed gives it power as the speed is decreased by the small pinion which goes into the larger wheel on feed-rod. There is a space between this pinion and cone, so that when the stop is adjusted on any part of feed-rod and the projection on the apron comes in contact with the stop, it moves the rod and gear out of contact with the pinion; then the carriage stops feeding. When the carriage is moved back for another chip, a spiral spring in the right hand box forces the feed-rod and gear back in position ready for the next chip, this makes a reliable stop motion which is not liable to get out of order. The worm on feed-rod runs in an oil box. One person may run a number of these Lathes without danger of damage to the work. It also signals or calls the attention of the operative when it stops; this stop when not required in general work, can be slipped out of the way. No. 2 cones are applied to all Lathes with buck gears. No. 1, 2 and 3 cones are for single head Lathes. No. 3 cone makes a strong pulling Lathe. The hangers are so made that they can be raised or lowered to save the annoyance of unlacing and lacing the belt to take it up. These Lathes are manufactured by JOHN BIRKENHEAD, at Mansfield, Mass.

#### Tool-Holder for Lathes.

CONRAD MÜLLER, OF COLUMBUS, O., PATENTEE.

THE object of this invention is to provide a new and improved device for holding and adjusting the cutting-tool of a lathe in such a manner that it will be held firmly and can be adjusted very nicely and accurately without being affected by the inaccuracies and lost motion of the screw-spindle for moving the tool-holding block.

The invention consists of a screw and nuts mounted thereon for adjusting the tool-holding block or slide of a lathe within the limits of the lost motion of the main spindle, which nuts have graduated collars to facilitate their accurate adjustment.

It further consists of a cross-piece in which this adjusting-screw is journaled, which cross-piece is provided with devices for locking it in position, and a wedge provided with a squared aperture, combined with an eccentric disk for moving the wedge to lock or unlock the cross-piece. The following is a description of the device and its operation.

A sliding block, provided in its bottom with a transverse dove-tailed recess, rests on the dove-tailed tracks of the frame, which tracks pass into the dove-tailed groove in the bottom of the block or slide. A screw-spindle, passing into a nut in the bottom of the block or slide, is journaled in the end of the frame, and is provided with a crank-handle or a hand-wheel for turning it, and thereby moving the slide or block forward or backward. The block is provided in its top with a longitudinal groove for

receiving the bottom of the tool-holder. A cross-piece provided in its bottom with a dove-tailed recess rests on the tracks. A screw-spindle which is held to turn in the block, but cannot move longitudinally in the same, passes through the cross-piece and on it nuts are mounted on opposite sides, which nuts have graduated collars. A wedge is placed between one of the shanks of the cross-piece and the outer surface of one of the tracks, and this wedge is provided with a square or oblong aperture in which a disk is located, which is eccentrically mounted on the inner end of a pintle passing through this shank of the cross-piece and having its outer end squared, so that a key will fit thereon. The spindle is provided with a rigidly-mounted collar to prevent a movement of this spindle in the direction of its length.

The operation is as follows: The block or slide is moved on the tracks by turning the spindle; but as this spindle has some lost motion the cutting-tool cannot be adjusted very nicely and accurately, especially in cutting screw-threads. To accomplish this is provided the screw and the nuts. When the tool has been adjusted by means of the spindle, the cross-piece is locked in place on the tracks by turning the pintle in such a manner that the eccentric disk will push the wedge in between the shank of the cross-piece and the outer surface of the track. The block is then to be moved slightly forward and the nuts so adjusted that its inner end will be from the corresponding side of the cross-piece the distance the block is to be moved. Then the other nut is turned, whereby the block will be moved forward until the inner end of the former rests against the cross-piece. In a similar manner the block can be moved in the inverse direction.

#### Chain Motor.

HENRY GURNEY, OF EAST NODAWAY, IOWA, PATENTEE.

THE inventor of this device was prompted to perfect it by watching the operation of "check rowing" in a neighbor's corn-field and concluded that if corn could be put into the ground by means of an anchor remote from the necessary machinery the same principle could be applied in pulling railway trains and tram-cars up steep gradients.

The operation of the contemplated device is very simple. If it were desired to pull a train up an inclined surface the chain would lie between the rails, and be solidly secured at the top of the hill. It would engage with a sprocket wheel placed on the main axle of the engine in such a manner that the driving mechanism of the engine would pull on the chain, which being fast and stationary, must cause the engine to roll up the hill and carry its load also.

#### Bell's Improved Ventilator for Railway Closets.

THIS device is a simple arrangement by which perfect ventilation is obtained in the closets of passenger cars, at the same time securing a downward current through the pipe and avoiding the upward draught which is ordinarily so

troublesome. It is placed under the floor of the car directly beneath the pipe, and consists of a funnel shaped hollow cone with a curved surface. The motion of the train in either direction causes the air to press downward through the funnel creating a vacuum at the base of the pipe thus securing a downward current through the lower orifice of the basin. The ventilator has been in use on a number of railways and has acted with perfect satisfaction. It has been ordered for over 700 cars on the Pennsylvania Railroad and is now being tested on the New Jersey Central, Erie, New York Central, and Union Pacific roads. A marked feature of the device is that it may be placed upon any car without alteration and at small expense. The ventilator is under the charge of E. Y. BELL, at No. 50 Exchange Place, New York.

#### A Powerful Locomotive.

THE following is a description of the new locomotive Pilgrim constructed at the shops of the Old Colony Railroad Company, to run on the New York line in connection with the new sound steamer Pilgrim: Diameter of cylinder, 18 inches, 24 inches stroke; of driving wheels, 72 inches; truck wheels, 30 inches; tender wheels, 33 inches; diameter of boiler, 52 inches at smallest point inside; length of fire-box, 72 inches inside; width of same, 35½ inches; number of boiler tubes, 212, each 11 feet 6 inches long by 2 inches diameter; boiler made of steel plate seven-sixteenths of an inch in thickness; double riveted fire-box of steel plate five-sixteenth of an inch in thickness; flue sheets one-half inch back and five-eighths inch front; total amount of heating surface, 1,365 square feet; boiler capable of running at 160 pounds pressure to the square inch; weight of engine in working order, 85,500 pounds; tender, 57,800 pounds; total length over all, engines and tender, 52 feet 8 inches. The engine and tender are painted black, with scarcely any ornamentation. The automatic brake is used on tender and driving wheels. The new locomotive takes the place of the old inside connected engine, the Pilgrim, which was constructed about thirty years ago by the Amoskeag Manufacturing Company, of Manchester, N. H., and has been in constant use ever since. When first completed the old Pilgrim was called a very large and powerful machine, and was put to service on the Fall River steamboat train. But compared with the present Pilgrim this was a small affair.

#### Keely's Monster Engine.

THE Philadelphia Record says that the work of erecting the final and complete motor that is to revolutionize all motive power has been commenced at the shop of Mr. Keely in that city. According to that paper thirteen tons of material to be used in the construction of the engine had already arrived, with more to come. The apparatus will have a capacity of five hundred horse-power. The parts of the engine are massive, and are composed of Austrian gun metal and the hardest of hardened steel. The affair is a counterpart of the small engine which

has been operated in the past. The major portion of it was made in that city, while some of the sections were cast in Baltimore and New York, the idea being not to have all done in one place, so that the founders would gain an idea of the engine before it is erected and experimented upon. After the engine has been operated successfully it will be removed from the shop and placed upon trucks. It is then proposed to adjust it for use as a locomotive, and the first journey is to be made to New York. Mr. Keely is bending all his energies to have the trial trip occur on the coming Fourth of July.

#### A Powerful Testing Machine.

MESSRS. REIHLÉ BROS., Philadelphia, have recently completed, at their scale and testing machine works, Ninth street, above Master, a greatly improved screw-power machine of 120,000 pounds capacity, for testing the tensile, transverse and compressive power of iron, next to the largest they ever manufactured, one of 150,000 pounds capacity being now in use by the Bradlee Chain Company of Philadelphia. A trial of its tensile strain was given recently, an inch wrought iron bolt about 15 inches long being used for the test. The bolt was confined in the boxes by patented cast-steel wedges with a slightly rounded up face. The power was applied and continued for ten minutes, when, at a strain of 54,000 pounds, the bolt parted, it having been elongated about two inches and reduced half an inch in diameter in the operation. The machine worked quietly and smoothly.

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### TO INVENTORS

—AND THE—

### RAILWAY SUPPLY TRADE GENERALLY.

Parties having New Patents of any description, which promise to be of value to the Railway trade, are cordially invited to correspond with the undersigned. My practical experience in all details of the trade enables me to judge promptly whether new patents really deserve to be classed among the improvements or not, and advice will be freely and frankly given in every case. When found to possess real merit I will be pleased to assist the inventor or owner in bringing the articles into use.

I wish to be conversant with everything connected with the general Railway Supply Business, and have no old foggy notions. The trade is young and always progressing, and it is my ambition to be abreast of the times—always ahead when I can—in the rear, NEVER. Whenever new inventions recommend themselves to my judgment and experience as improvements, I will find parties to manufacture on royalty or make liberal arrangements for the introduction of the same to the trade as agent.

Trusting, after due consideration of the above matter, you may deem proper to communicate with the undersigned, I remain, awaiting your further pleasure,

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## SAWS AND FILES.

# 500,000 SOLD IN 1880.

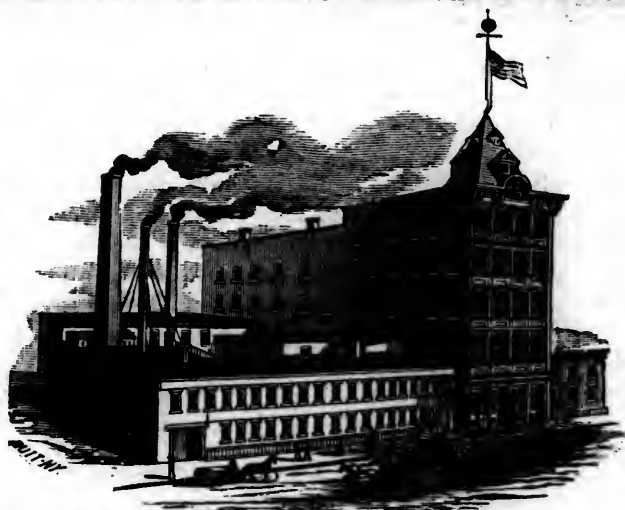
THE UNRIVALLED PRODUCTION OF THE E. M. BOYNTON SAW AND FILE COMPANY—THE RECENT RE-ORGANIZATION.

FOR a good many years past few manufacturers have been so well or favorably known in their respective lines of business as Mr. E. M. BOYNTON, the saw manufacturer, in his. The saws and files, etc., made by him are regarded by experts as superior to anything else of the kind made in any part of the world, and the demand for them has been rapidly growing. On January 1 a re-organization of the concern occurred, a joint stock company being formed under the style of the E. M. Boynton Saw and File Company, with the following officers: E. M. Boynton president, C. W. Boynton vice-president, D. Farrington secretary, and T. B. Cummings, treasurer. The office and warehouse remain at the old address at 80 Beekman street, and the factory, an engraving of which is annexed, is in Brooklyn. This factory is probably the most complete establishment of its kind in the country. It can turn out more than one thousand saws per day. The company control fifteen of the most valuable patents ever taken out upon saws. One of the great specialties is the patent "Lightning" law, patented in 1876. It has what are called "M" teeth. The patent M teeth being double, with one dress and set, cut only with outside edges, one blade follows while the other is cutting, and vice versa. As the saw is drawn back and forth, meeting the fibre direct at an opposite angle from the old V tooth, the fibre is cut off by a forward and upward motion; the cutting is mechanical, inevitable, steady and uniform. In practical use the following advantages are observed: 1st. Simplicity in sharpening. No shortening required—all teeth double M cutting clearer. 2d. A cutting edge. The file is only used to dress teeth

Not one in a thousand failed to give satisfaction.

The First Award of Australia has been added to the Centennial Awards.

The 12-inch log at bottom of this picture was sawed off by two men by hand in 7 seconds before Commissioners of every country and the Emperor of Brazil.



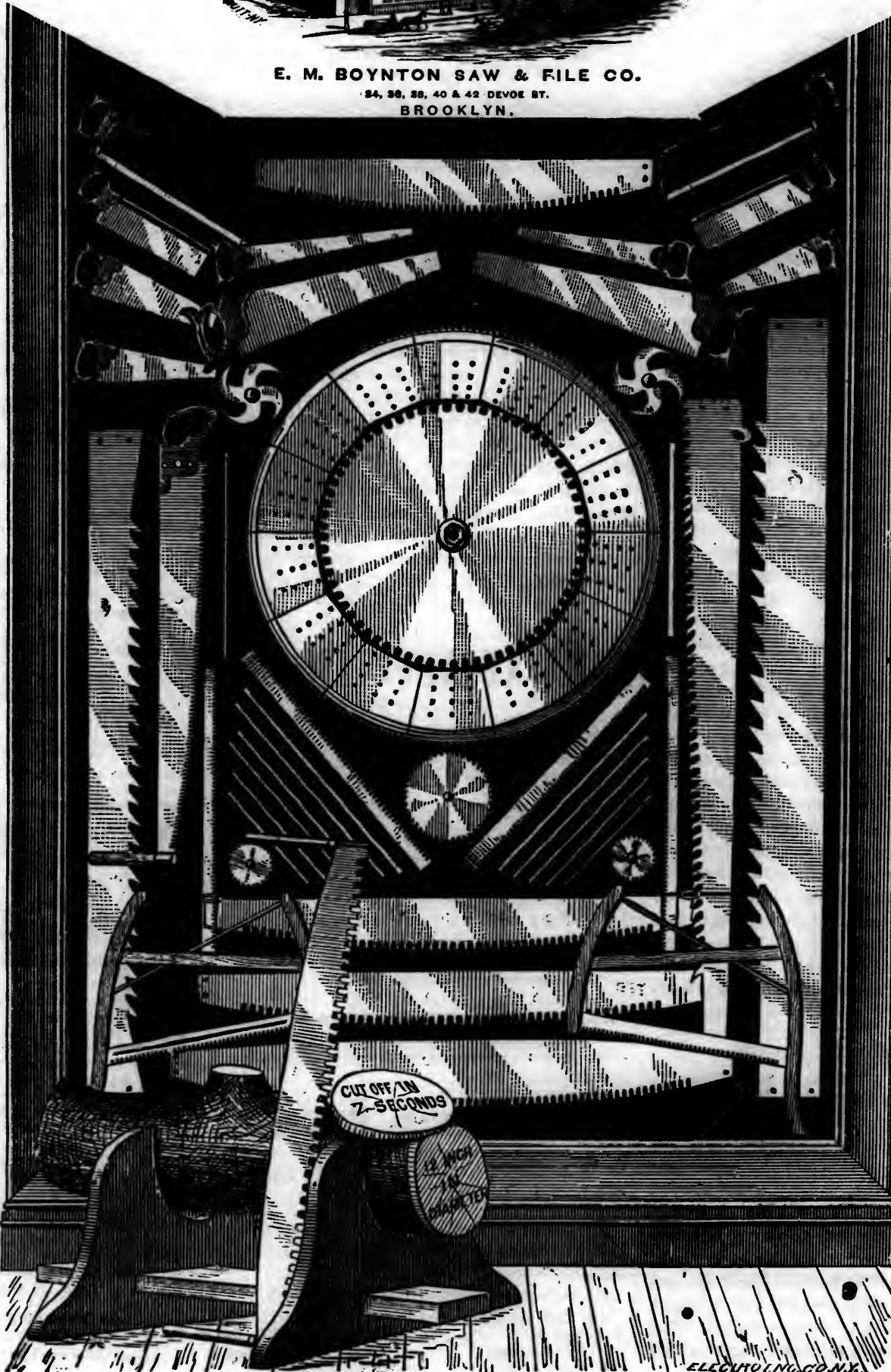
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edge being given with whetstone—saving of friction, as well as files, steel, strength and time. 3d. Doubleteeth—are stiffer, less vibration. 4th. Consequently, may be and are gummed longer, saving expense and frequent repairs. 5th. Are stronger than any other. 6th. Directcutting (upwards) avoids grit, divides resistance, relieves the pressure and wear on point of teeth—avoiding the grinding, weighing and clogging of old style saws. 7th. No waste of power, as in the old scratching system, the cutting being direct, uniform, economical and continuous. 8th. In direct cutting, edge holds longer than if dragged over the timber. 9th. It is the front cut of the hand saw cutting both ways. 10th. This saw cuts with less friction, much easier and faster than any heretofore known, while more simple than any other patent saw. The "Lightning" combines the two principles in one tooth. One point of M follows while the other is cutting, which regulates the feed, and enables the teeth of the plow or vertical form to be used for both cross cutting and slitting. This patent tooth is as simple as any hand-saw tooth to sharpen. Boynton's saws were effectually tested before Judges at the Philadelphia Fair, July 6 and 7. An ash log, eleven inches in diameter, was sawed off, with a four foot "Lightning" cross-cut, by two men, in precisely six seconds, as timed by the Chairman of the Centennial Judges of Class 15. The speed is unprecedented, and would cut a cord of wood in four minutes. The representatives of Russia, Austria, France, Italy, Spain, Belgium, Sweden, England and several other countries were present, and expressed their high appreciation. Many of the leading saw manufacturers of the world were present, but not one accepted Mr. Boynton's \$1,000 challenge. The M principle is applied to saws of various kinds and for all sorts of purposes. In consequence of the practical value of the patents taken out by Mr. Boynton the earnings of the factory have multiplied fivefold in five years, and there is no doubt that an even more rapid growth will be recorded in the future.—*New York Scientific Times and Mercantile Register*, Feb. 3, 1883.

This Company also manufactures the **Noon-Day Stove Polish**, so rapidly coming into favor.



ELECTRIC CO. N.Y.